TROONATNOOR

SOUND FOUNDATIONS

20-20

FILM MAKER'S GUIDE

Digital Video theory and practice
Basic Lighting
Cinematic camera moves
Hand-held, Gimbal, and Glidecam techniques
Editing and Transitions
Basic Color Design
Basic Audio and Sound Design

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General notes on this new TROONATNOOR guide

This guide will be broken up into two parts. **Part one** will be a general practical guide for all film makers. It will cover all you need to know about shooting high quality images. And adding as much 'Hollywood' magic as possible, even on the strictest of budgets. **Part two** will be a guide to using Adobe After Effects for post-production and editing.

Don't expect someone actively working, successfully, in the industry, to be writing this guide. They would be earning lots of money. And probably needing that weekly paycheck to pay for all the good things in their life. I have almost no 'good things' in my life. Teague's Bridle and all. A pro would expect to be paid a lot of money not just to endure the process of writing, but for giving away what they would consider their most valuable trade secrets. So they'd expect to be paid handsomely. At least a year of their usual earnings. So who is going to pay them? And the editor that will have to check everything, and re-write everything, to get useable 'copy'. And the focus group leaders who find learners to 'test' the lessons on, and get as much feedback as they can on what is working and what isn't. What is confusing? What has been left out of explanations? Skipped over. Taken for granted by the 'specialist' who CAN DO, but has no understanding of how to TEACH it to OTHERS so THEY can do it TOO.

So at very least, if such a guide as this ever got commissioned, with a budget to pay an entire team of people for a year, and then a marketing budget, can you imagine what the sale price would have to be, just to hope to 'break even' , as a business proposition?

So guides like these are not going to be written by top performing industry leaders. And these people probably wouldn't be motivated to share their insights, or risk being 'out of the game' for the time it would take to write a guide like this. Even if someone was willing to pay them what they would otherwise have earned from DOING their job, rather than trying to teach it to others. Who would then represent COMPETITION for the author. And thus potentially ruin their career down the line. Or jeopardize their plans to open a 'Film School'. Or take a lucrative teaching post at an existing one.

So you are going to end up with 'teachers' writing such guides. Academics. People who have done lots of courses, but never actually done anything 'great' in the 'real world'. People who can teach but can't do. They just didn't have the 'flair' or 'talent' or 'feel' for it. They can explain how the great films were made. And perhaps give us insights into WHY they ARE so great. But they themselves don't have that greatness within themselves. Or at least never got the opportunity to allow it to fully develop and bloom, artistically. Probably they would not have managed it, even if they had been born 'trust fund kiddies' like most Hollywood Directors.

In any case, academics, by nature, are not courageous enough for the sloppy, messy, 'hit and miss' evolution of ideas and forms it takes to 'create' art.

Academics can, if we are lucky, 'reverse engineer' a film, and if they are skilled Zen observers, MODEL the processes the artists went through, often ENDURED. But they are not capable of 'engineering' anything. They just don't have the 'feel' for it. They can learn to DE-CONSTRUCT, but are incapable of construction.

So you are stuck with me. Thanks to my 'Teague's' Bridle' I am available. I don't have anything better to do. No-one is offering me money to work for them. Or with them. They don't want to work with me even for free. So my opportunity cost is about zero. In fact I've been blacklisted as a teacher. As a public servant. And many of my books have been blacklisted and banned. I've been banned from YouTube. And that means Google too. I've had ALL my books, including my guides which had zero political content of any type, banned from many major self-publishing platforms, and myself blacklisted from them. So I find myself free to teach myself skills which, as a child, and student, and young adult, I thought I would never possibly have a chance to learn. Thanks to Pirate Bay torrents, YouTube, and my 'Teague's Bridle'. Hey, I hate the tooth pain, migraines, nausea, fever, sinus inflammations, and so on, that come with this 'situation'. And the loneliness and isolation. The lack of any human affection, let alone a sex life. But what am I to do? Other than behave as constructively and conscientiously as I can, and continue learning and teaching, and hoping I don't wake up tomorrow.

Or hoping that if I DO wake up, it is to a world AT LEAST HEADINING IN THE DIRECTION of that optimal sort of world defined by my own PROTOCOLS. An escape from this Cult of Judah prison. A prison where the inmates all suffer Stockholm syndrome, and identify with their jailors, and the system that convicted them of the crime of THINKING.

These prisoners have swallowed the story that that nasty, vicious, childish, vindictive, mean, cruel, unfair, unjust, temper tantrum throwing, infantile god 'Yahweh', who commanded his followers to kill their own first born sons, and to kill every man, woman, child, pregnant woman, un-born child, and their animals, in wholescale genocide, because they 'displeased him', and who murdered every living thing on earth, in a flood, because IT displeased him, has suddenly turned into 'Mr Nice Guy? After he'd devoted no more than an entire WEEK, a full working WEEK, to the entire project of design and construction and production of his 'creation', he let it 'run wild' and then lost patience with it. Blaming his VICTIMS for the failure of HIS design? That after MILLENIA of living in denial, and blaming his victims, he suddenly has a change of heart? Finds he has a guilty conscience? So decides to be born as a mortal, to die on a cross, as some sort of 'compensation' package, and to 'save us' from the 'sin' that that HE HIMSELF, for some completely neurotic, insane, psychopathic, sociopathic, mentally deranged REASON had himself 'written into the code of this game'?

Anyway, this guide, like all my other guides, are essentially written as a reference for myself. So I have no incentive to 'shortchange' the reader. Myself. By pretending to understanding something I didn't, and just 'bluff' my way through the bits that were 'hard to understand', hoping the reader wouldn't notice. Or 'glossing over' those bits that were 'new' to me.

Remember that many professionals have found a 'system' that works for THEM. A process. A method. An approach. It is 'familiar' to them and they associate it with success. So this is what they 'KNOW' about making films. And learning this method will add a string to your bow, and will help you if you intend merely trying to emulate their films. So it pays to have someone 'model' their behavior. Their process. Their method. And explain how it works. And why it works.

But if you want to evolve to become the next interesting director, you'll have to wean yourself from this teat. This comfortable 'familiar' place. The 'known'. And forge your own path. Hit and miss style. Negative selection style. And the best way to do this is to first 'model' as many great film maker's processes as you can. Collect as much information on the possible ways of approaching film making. And then 'grokking' the essentials that each share. And reflecting also upon what is different to each.

You can use what you've learned as your springboard. As starting points. Or simply emulate them, to ensure 'Hollywood' success. To ensure you are 'in demand' as a film maker, and thus constantly employed. Even if you are only making television commercials.

Or you can take confidence from what you've learned, and use that confidence to DO SOMETHING CCOMPLETELY DIFFERENT. Take a big risk. You might become the next 'big' film director. Earn your own groupies. Be 'modelled' by all the academics who will explain what you are doing, and why it works, to their students. You'll become a 'REEL' deity. Be worshipped and admired. And most of what is written about you and your process will probably be wrong. And leave you speechless. But you'll be famous. And you might even get to make more films THE WAY YOU WANT TO. But don't be shocked if you are expected to 'conform' in the long run, to the 'tried and tested' methods and approaches that have made Hollywood Directors, and the industry, so fabulously wealthy.

A tip though. Challenge any Cult of Judah dogma, from 'The official 911 narrative' to 'The official Holocaust narrative', or even the whole 'Man-made global climate crisis' narrative, in any way or form, and you can say goodbye to ANY chance of a career in the mass media. Which is to say that if you WANT to succeed, you'll have to find a way to REFER TO and INCORPORATE and RE-INFORCE those narratives. To 'maintain' those myths. Which are, after all, as much Hollywood productions, as any feature film. And have had at least as much money poured into producing, and promoting, and thus maintaining them, as any Hollywood blockbuster.

Remembering my guides are reference books written for myself, 'The Dumbest Expected User', you can expect them to be clear. No bluffing. No 'holes'. No bits 'left out' because they were too hard to explain. Because I write for myself, I have the most active and vocal and pushy built-in critic and editor.

What I do is gather information, and present it in a way that makes sense to me. In the process I end up being forced to observe how others have approached this task, in the form of video, and written materials. Most writers make lots of assumptions about what they think they know, and how best to explain it. Each of us has a dominant representation system which we favor. Some people are more visual, others more intuitive, and some like me require things to be literally 'SPELLED OUT' in words. Like a computer program. In a logical sequence. One that moves forward in a linear fashion. One step at a time. Leaving no gaps to stumble and fall into, and become lost in.

As L Ron Hubbard suggests, if you find yourself lost, go back to the last place you felt comfortable. And start again. I'd suggest that you go back a little further, to make sure your comfort is not a 'false friend'. Often what we THINK we 'know' is actually incorrect. And because we fail to go back a bit FURTHER, we end up in a loop. Getting nowhere. Usually giving up. Throwing in the towel. Or pretending we understand what we don't.

My TROONATNOOR process is all about going back as FAR as we can, concerning what we think we know. To identify assumptions we had made, without realising it. Assumptions often in the form of 'received wisdom' and 'tradition' and 'authority of numbers or status'. I've gone deeper than any philosopher who dared publish their findings. I've found that most of what we think we know is merely HEARSAY. We've accepted it based on the 'authority' of numbers, public opinion, or tradition. Or because of 'THE AUTHORITATIVE' status of the source. Such as a RESPECTED news presenter. Or teacher. Or Religious figure. Or Nobel Prize Winning scientist. Or New York Times Best-selling author. Or well-published Professor. We conflate 'familiar' with 'known'. And FEEL it to be 'truth'. Simply because it feel FAMILIAR. It is what WE 'KNOW'. Have 'known'. All our lives. But when we interrogate WHY we 'know' it, we discover we are really simply ASSUMING that it is fact. Truth. We are really just making assumptions. And the first step to challenging and moving beyond these assumptions, is simply become aware of the fact that we ARE dealing here, WITH assumptions. That have no scientific basis. No historical basis. We have no EVIDENCE for them. No SENSORY impressions to work with. Someone ELSE may have claimed to SEE something, a long time ago, but since then, zero. The impressions of our senses are the most 'authoritative' source of 'knowledge' we have. And yet MOST of what we believe to be true, and which we feel we ‘know’, is NOT based on the impressions of our own senses. Nor the impressions of any living persons. And when we learn the difference between specious sophistry and compelling argument, we find that most ‘arguments’ presented as ‘evidence’ and ‘proof’ for most of our beliefs, are pure specious sophistry. In no way compelling.

That is one of the very few digressions I will take in this guide. You can read all my other digressions in my other guides. And then hopefully become curious enough to begin delving into the entire CANON of the TROONATNOOR imprint.

Now back to film making. If you don’t have a script, or are interested in what makes the most famous scripts written SO FAR, work, download a copy of my ‘(Re) Writing the Script of Your Life’, from my TROONATNOOR Patreon account, or WordPress TROONATNOOR account, or using links in my BITCHUTE.com TROONATNOOR video descriptions, or on my ‘Marduk Tyr’ Facebook page. You’ll then find you can download PDF, EPub, and Mobi versions of the entire TROONATNOOR imprint, at no cost to YOU. I’ve already paid the cost. Of course if you want to ‘have done unto as you do unto others’, and be rewarded for YOUR effort, sacrifice, and risk, then you can compensate me as you see fit, for MY effort, sacrifice, and risk.

My aim is to offer graded teaching/learning materials as modules, which represent the best, most logical, optimal, most easily accessible, and fast, way to teach and learn the skills, and gain the knowledge, required to allow even the most ambitious film maker, with the most basic and limited access to technology, such as generic discounted laptops, torrents, and After Effects. I’ll aim to make it possible for anyone who can and will commit intensive study time, to learn the most useful and important skills in After Effects in under one month, so they can take advantage of the one month ‘free’ trial being offered by Adobe.

The materials I had access to often proved intimidating, frustrating, and irritating to work with. But what I was ultimately able to ‘glean’ from them, I am now able to present in a quite simple, straightforward, manner. Without all the ‘learning rage’ and ‘despair’ and ‘nervous breakdowns’ and ‘temper tantrums’ and simply finding myself lost and … basically HATING the presenter for not having bothered to edit their videos, or in most cases even adequately prepare them. To be fair, many of these materials were offered ‘free’. But consider that time is precious. And ‘attention’ and ‘concentration’ and ‘focus’ are even more precious. So ‘free’ stuff often COSTS you in many ways. The point of ‘professional’ courses is that they are supposed to ensure you DO learn, and at the lowest cost, in terms of time and frustration.

Some people see other people’s errors and mistakes, poor design decisions, lack of ‘thinking it through’, lack of ‘testing’ and lack of real ambition, as expressed through their ‘products’ and ‘designs’, and in this case ‘lessons’, as an opportunity to improve. As a ‘niche’ in the ‘market’ that THEY can fill with designs and products that DO live up to their own ambitiously high standards. People like me. I’ve learned a lot about what NOT to do. Because, as is my process, I approached this as a total beginner. Designing this course slowly and in fits and starts, as I learned the materials myself. So I was THERE at every moment as a STUDENT. A LEARNER. NEVER having approached anything from the position of a ‘natural’ or an ‘expert’ who either never HAD to really ‘try’ to learn (it came intuitively and naturally to them as a gifted, talented student of this particular subject matter), or had gone through that process so LONG ago that they were completely alienated and estranged FROM it. Having learned their material over many years, it has become ‘muscle memory’ and ‘self-evident’ and ‘obvious’ to them. They can do it all without thinking. And there’s the rub. They have zero connection with learners. They cannot ‘enter into’ the process of learning their craft over. Every time they write a lesson plan up, they ‘skip’ important details.

It is incredibly hard to ‘slow yourself down’ when you are ‘in the zone’, experiencing those ZEN moments of full concentration and ‘entering into’ something, and break down every HIGHER action into its smaller parts. To take a step back, and explain every little step in detail, without omitting anything that could produce those ‘gaps’ in understanding that prevent genuine comprehension and learning.

Often it even takes an objective, independent, ignorant, external ‘MODELLER’ activing observing, watching, and asking detailed questions, to even remind the person whose process and decision making chain are being ‘modelled’ , ABOUT most of those steps. To ARTICULATE them EXPLICITLY and FORMALLY for the student. Bandler probably taught the gifted, talented, intuitive ‘naturals’ a few things about their OWN behavior that THEY themselves would have remained oblivious to. Not to mention observing typical behaviors of normal people, and finding the patterns that were latent in them, including the ‘micro-signaling’ and ‘micro-gestures’ that people who are ‘gifted’ ‘Cold Readers’ and ‘Psychics’ use to ‘READ’ people. Signals anyone can be trained to become aware of, and sensitive to, in true ZEN style. Signals some ‘psychics’ are not even aware that they ARE reading / picking up on / interpreting. Signals that others, trained in this high art, would prefer remain ‘esoteric’ knowledge. Rather than the basis of formal Neuro-Linguistic-Programming training courses.

When you’ve mastered getting from A to B, most of the steps and decisions come automatically, almost subliminally, NON-consciously, as muscle memory and stimulus-responses. How many times have you set out in your car to drive to work, or the shops, and arrived there without any memory of what happened in between departure and arrival? We ‘tune out’ and engage muscle memory very often. It is rare that we are actively, consciously, driving. Or doing anything else that has become ‘routine’ for us. Easy. Automatic.

So only the active learner, who considers EVERY drive a NEW learning opportunity, and who is an active, DEFENSIVE, driver, will be able to tell you anything about their driving habits. For most people they are just that. Habitual. Carried out without reflection. Having been established as 'traditions' at some point, and then taken for granted as ritual, habitual, unthinking, action.

It takes SO much time to prepare the optimal lesson. Few people are willing to commit to that effort and time. Though you'd think the university professionals paid high salaries to teach this subject would have, years ago, published the optimal lesson plans, which is not the case. They consider their job to be more about 'ad-libbing' and 'demonstrating' rather than 'Designing learning materials'. They would in effect do themselves out of their jobs, if they managed to do what I do, with my own guides.

So we are left with people who decide, often on the spur of the moment, to 'make a YouTube video' demonstrating something. Often in order to sell 'the full course' they are offering. If their 'full course' is as haphazard as their 'freebie teasers' then no thanks. And if their 'complete course' is really of a much higher standard than their freebie tasters, then their marketing strategy is all wrong. Like handing out free samples of your product, but only handing out the 'factory seconds' or 'rejects'. You are going to do more harm than good, and ruin your own reputation.

The typical YouTube Vloggers make videos without planning much. And without editing much, if at all. Without re-doing anything. Without writing a 'script' of their videos that others can read and follow. A recipe. So they ASSUME they have explained things they haven't.

The only way to TEST your video or lesson plan is to hand it over to a student. And only if THEY can reproduce what the teacher did, using ONLY the lesson plan (with references back to earlier, simpler lesson plans for more advanced material), can the teacher claim their lesson as a success. If the experienced cook 'does stuff' they have not written down 'because it is self-evident to them, automatic, muscle-memory, and too 'boring' and 'obvious' to state', while following what they imagine is their own 'recipe', then others, picking up the supposed 'recipe' will NOT produce the same results as the lesson plan's author. For they can ONLY do what they have been INSTRUCTED to do. They do NOT have all the 'muscle memory' which appears as 'intuition' and 'automatic' actions. Built up over years and years of action. So that they have become non-conscious actions and considerations. Made by the sub-conscious itself. Carried out by the MUSCLES rather than the mind. So they will NOT successfully reproduce the efforts of the author. But while this sounds obvious, unless you really audit your lessons, and continually redraft the copy, and continually test the new drafts on NEW students, and take this time and these precautions, and MAKE this HUGE investment, chances are you will fall into the same trap of almost every other learning materials designer I have come across, in the various areas I have attempted to learn new things.

Read my explanations of my teaching concept and processes in my other guides, such as my 'Optimal English' and 'Optimal Reaper', and 'Sound Foundations Audio Engineering Reference Guide' and 'Planned Abundance' and 'Vocal Training Guide'. Especially if you ARE a teacher, or plan to be. Or at least plan to make some instructional videos or other materials for YouTube. Or like me, for your own reference.

Teachers forget their students have not yet had time to develop 'muscle memory' for the many tedious steps involved in the simplest of tasks. So they fail to articulate each step clearly.

Imagine teaching a stroke survivor how to walk, or write! Now THERE is a truly focussed teacher with clear teaching concepts in play!

Today's students are also not trained to pay attention. Because teachers tend to ramble on half the time, and are rarely following clear, precise, lesson plans. Often because there are overworked, rushing from class to class, often for classes they were never trained to teach. So students are 'accustomed' to 'switching off' then waiting till the teacher has finished 'rambling' before asking 'so how do we do this?' I admit I was guilty of that as a student, at school. And my concentration span is probably greater, having grown up without the instant gratification of the internet!

First we have to become clear about the basics of photography and video and film capture. Learn what all the possible 'settings' do, and the effects they can be used to achieve. Then learn how to get stable footage, with as much 'data' as possible, for later 'color correction'. And then work on our 'moves'. The typical 'Hollywood' 'Camera Moves'. Which traditionally required expensive apparatuses, but which we can, even on the smallest budget, learn to emulate with the most basic of gear, and also within programs like After Effects.

A program like After Effects is a nightmare of small steps, which MUST be attended to. Missing a step is like taking some IKEA flatpack, assembling the product, and then finding you have 'bits left over'. And worse, finding the thing doesn't function as a result. Because you missed some step. Because the instructions were not clear enough. Or because you didn't pay attention.

As teachers we have to condition students to EXPECT valuable information each time we open our mouths. So they are eager to listen. As eager as a dog waiting to hear that bell, and get that snack! So they will become attentive to our every utterance. As the bird in the lab attends to their handler's every gesture, looking for the 'sign' that 'food' is about to appear. Only when we have their full attention will they 'track' with us.

It is our fault then if they get lost because we 'skipped' or 'rushed' some tedious step we find frustrating to repeat for the millionth time. And we must, like the 'defensive driver', be on the active LOOKOUT for SIGNS that we have 'lost' any of them. Signs that our message was not received loud and clear. Because it was NOT clear. Because we've led them down a staircase, and removed a few steps, sending them sprawling, or at least stumbling.

We must actively look for signs of 'recognition' and 'understanding', as well as 'confusion' and 'WTF?' Sadly students are conditioned to PRETEND they understand. Asking questions is rarely REALLY encouraged. By either teachers or other students.

When it comes to learning a SKILL, there is no better way to 'test' for 'understanding' than actually DOING something. Attempting to REPLICATE the actions and steps of the teacher. And getting the same result. The results usually speak for themselves. It is hard to 'bluff' and 'pretend' when your attempt to DO results in a chaotic mess appearing on the screen, rather than the clever text animation, or 'special effect' the teacher just 'walked you through'.

DOING is required not just to demonstrate what you do and do NOT know, to yourself. But also as a memory aid. The more 'representation systems' you engage, the better. The more, different, ACTIONS you associate together, the more 'touchstones' your memory will have, and the more possible 'TRIGGERS' there will be to recall. So you will have a chance to remember what you SAW, what you HEARD, what you WROTE, and what you DID. Recalling any one of these can trigger recall of all of them. It is how people are trained to improve their memory. To the point of being able to make a 'trick' of it. Or as part of their skill-set for their occupation.

B.I.B, a 'Bildung's Institute' in Paderborn, Germany, believed they could teach Photo-Shop with two students to a computer. This meant only ONE of them could actively follow the instructions, as they were given. The other would have to wait their turn. They also felt that if 'most' of the students already knew something, the 'others' should 'borrow a library book and teach it to themselves', even though the course was marketed as a 'beginners' course. I was actually banned from EVER studying at that private institute, when I complained to the government that was paying my tuition fees that the institute was not honouring its contractual obligations to TEACH me the course curriculum it has SOLD me.

Other 'online' courses I attempted were so badly designed that I was not learning anything. And there was no real feedback possibility. No way to 'ask questions' and get answers within a useful time frame, let alone in 'real time'.

Other courses were just badly run and designed. Making even learning something as simple as HTML a nightmare. I later taught myself, and designed a simple online course to demonstrate how it COULD be done. My geocities account and Yahoo account was closed and no reason was ever given. And this was just back when I was criticizing religion IN GENERAL, and suggesting the IDEA of 'social realities' that might be at odds with objective reality. Decades before I woke up to the Cult of Judah and the whole 'false flag' and 'fake news' and 'New World Order' agenda.

Teachers must accept the less 'sexy' parts of their job. That of teaching the routine, mundane, 'baby steps' IN DETAIL. Omitting nothing. Leaving nothing to chance. Risking no misunderstanding. Accepting that THEY are being paid to teach. Most students who manage to get through most courses ONLY do this IN SPITE OF the lame teaching, thanks to OTHER STUDENTS filling in the gaps for them, which went begging during the actual formal lessons, and in the teaching materials, if there were any.

Another treacherous threat that lays lurking in the grass beneath your feet is the temptation for student's THEMSELVES to make assumptions about what they ALREADY 'know' and 'understand'. Often students CAN sort of DO what is being taught. Or 'sort of' already 'know' it. We all fall into this trap easily. Learning is NOT fun for most people. Children LOVE learning. Adults consider it WORK. And most will attempt to work as LITTLE as possible. To take the path of least work, through their lives. And what is more tedious then more or less RE-learning what you feel you ALREADY know and understand?

Of course people ASSUME they 'know' and 'understand' much more than they really do. It takes the ZEN 'whacking stick' of 'shock and awe' or 'surprise' to even get most student's minds OPEN and ATTENTIVE and EXPECTING to LEARN something NEW. Or to gain a deeper, more meaningful, understanding, and INSIGHT into the subject at hand. Something UN-expected has to happen to 'wake them from their dogmatic slumbers'. So that they are even paying attention AT ALL.

When someone is talking to you, are you really actively listening? Or do you assume 'I know what they are going to say' and are merely waiting for your chance to respond? Or working out what YOU are going to say next?

When someone is talking about a subject you feel you have already mastered, are you more or less interested in what THEY are saying? Do you EXPECT to learn something NEW? Are you REALLY listening at all?

What do YOU do with that feeling of DISCOMFORT comes, when you do NOT understand what is being said? Simply ignore it? Hope it goes away? Or do YOU ask questions? How many people have the courage to interrupt a lecture to ASK questions? Even when the lecturer explicitly ASKS 'Does anyone have any questions?'

As students, we have to consciously remind ourselves, to discipline ourselves, to 'keep paying attention'. To remind ourselves that we can NOT know what the presenter is going to say next. To humble ourselves and assume it IS possible that even WE will learn something from even this most 'basic' of lessons.

Students often think 'Yeh, I've done something like that, I can do it, I don't have to pay attention', when in fact, if they learned to practise ZEN attending, they would find they learn something new about, and from, things they THOUGHT they already knew, and from materials and objects and subjects they were sure they 'knew everything about already' and 'held no mysteries for them' and thus 'held no interest for them'.

A 'University reader' from some American University I stumbled on in Poland had some great chapters in it, and one in particular on a biology professor who left a student to 'look at' some sample in a jar, each time they came to see them for 'advice'. This was frustrating for the student at first. They felt 'ripped off' by this ‘lazy professor'. However the student soon learned to LOOK and SEE, ZEN fashion.

After many hours they began noticing all sorts of DETAILS in the 'sample' they had failed to notice at first. They had been very dismissive of the very idea, at the start. But after several days they understood the wisdom of their professor. And their good fortune at having stumbled upon such a ‘Sensei’. For they had learned the ZEN discipline of true observation. The ability to assume you do NOT ‘know everything’ about something, no matter how ‘familiar’ (a.k.a ‘known’) it may seem at the start. No matter how confident you are that you ‘already know it all’. Or at least ‘everything there IS to know about THIS thing / object / subject. It is a humbling experience which breeds the future EXPECTATION that NEW things WILL be revealed, if only you, with an open mind, and a SENSE of expectancy, practise ZEN observation.

This has helped me over and over, to wade through materials on subjects I felt I ‘knew everything about already’. Often I learned something new. Or at least something of value, about how OTHERS perceived the world. And how they DE-ceived themselves. And how they had BEEN deceived.

Often it takes another person, coming from a different background, and thus looking at things from a different viewpoint, or ‘point of view’, to point out things that were staring us square in the face. But which we simply had never noticed. Had never seen. Never ‘taken in’. And thus never ‘perceived’.

This happens when someone explains a ‘magic trick’ to us. A simple ‘card trick’. No matter how well we attend and try to be sure of observing everything, and missing nothing, we DO miss the ‘set-up’ of the trick, which usually occurs BEFORE we start attending. Before we are paying attention. Usually while the magician, or their assistant, deliberately mis-direct our attention towards something ‘harmless’ to the trick. Giving the magician that moment in which to do something key to the trick, but which we don’t attend to. Our attention being elsewhere for this key moment. This is one reason magicians are loathe to repeat tricks too many times. The ‘misdirection’ might fail to draw out attention, and we might ‘see’ what we weren’t meant to see.

Even when there is no misdirection, we can easily ‘miss’ key information. Our brains have such limited short term memory, and processing capacities. Adequate for ‘gold mine labourers’, but not really fit for much critical reasoning. Unless we train our minds. And discipline our attention for very long periods of time. And take notes which we can refer back to as we progress in our ‘reasoning’.

I was keyed up to ‘discover’ the ‘trick’ in ‘Cold Reading’, during a documentary on that subject. I concentrated and focussed my attention, looking hard and listening actively, during the documentary. Even so, I missed some very important details, due to the maximum 7 or so item limit to my short term memory. Lack of RAM. And low processing power. Things that happened early in the documentary were apparently ‘jettisoned’ by my short term memory, as the documentary progressed, and I focussed on the ‘new’ information being presented. For later in the documentary the narrator / presenter drew some key facts to my attention, relating to the very start of the documentary. At first I was unable or unwilling to believe what they stated. This is nothing unusual. And the reason why the presenter then replayed key moments from earlier in the documentary. Those moments when the ‘Cold Reader’ straight out asked for personal information which their interlocutor offered up. Both their interlocutor, the person being ‘read’, and myself, and almost every other viewer, FORGOT about these moments, by the time the ‘Cold Reader’ ‘magically’ repeated the very same information. Pretending to be ‘reading their mind’. When in fact they were just repeating facts their ‘victim’ had freely volunteered at the start of their interactions. Between that time, and the ‘reading’, they had forgotten all about it. As had I. And most viewers.

This is why I find that written lesson plans, along with carefully scripted presentations, where the transcript details EVERY step in a process, along with offering links to explanations about key concepts, or adds this information in the body of the document, essential. We simply have such limited short term memory, and processing power, that we NEED reference materials to refer to later.

This is also why we need to make each NEW lesson clear in its particular aims. Aims which should never exceed more than 7 or so NEW pieces of information. We should design a lesson around 7 or fewer NEW points. Then allow the student to learn and PRACTISE these new points, so as to convert them from short term memory to long term memory, and ideally even ‘muscle’ memory.

Remember that our ‘Brain’ is made up of our entire nervous system. This extends from our spine to our skin. So our memory of ‘keyboard short-cuts’ resides not just in some brain centers in our head, but also in our fingers. Literally.

Our ears suffer from ‘fatigue’ just as our eyes do, and our ability to concentrate does. So keep lessons short and introduce no more than 7 NEW pieces of information per lesson. Then give a chance to practise the lesson. To offer the mind many different ‘triggers’ for later recall.

Then build up modules of lessons to cover themes and topics. And more complex processes. Ensure the processes build upon modules. Like climbing a ladder by rungs, or climbing a stairway one step at a time. Breaking down larger process paths into smaller, more easily learned and remembered, processes.

This makes teaching software like After Effects so tedious. For some very simple actions require the performance of MANY steps. And if you are trying to show off some elaborate technique, you are going to exceed the ‘7 NEW items’ limit really quickly. Before you are even through the first step, in many cases. So you are going to have to consider how to ‘break down’ the larger, impressive, technique, into many smaller, more manageable, in terms of teaching and learning, steps.

And overcome the urge to ‘rush ahead’, simply out of a desire to ‘show off’ what you can do. If your video is just to demonstrate the OUTCOME of a process, and SELL the actual lesson plan for it, then go ahead. But it is unfair to mislead your viewers about the nature of your video. If you lead them to assume that watching THIS video is going to teach them how to ‘replicate’ the outcome, and then mumble and rush through it, only to offer them a ‘special deal’ on the ACTUAL LESSON, you might do your enterprise, that of marketing your actual lesson, more harm than good. By not just destroying good will, but generating ill will, for you and your associated products.

My first question of an interlocutor is ‘are you willing to be WRONG about almost everything you claim to believe?’ It is rare that anyone has such an open mind about their own beliefs. They assume that what they happen to have been told growing up, by the various ‘authorities’ they trusted, just happens to be ‘the truth’. Everyone ELSE who was taught different things just happened to have been the unlucky. The ‘authority of numbers’ and ‘the authority of the majority’ is limited to a person’s own milieu. People overlook the fact that ‘the majority’ of people ‘in the world’ DISAGREE with them. They only care about the ‘local’ majority that surrounds THEM. Whom they live AMONG.

The ZEN principle is that you must have and OPEN mind. And EXPECT to be surprised by something. EXPECT to discover you were WRONG about something. EXPECT to suddenly SEE something you had MISSED before. This expectancy needs to be vague and unspecific. So that there is no prejudice. No pre-judgements. No assumptions. Just a general expectation that you are going to LEARN something. That something is bound to be REVEALED to you. If you are just patient, and continue actively LOOKING and OBSERVING.

If your mind is closed, then no NEW stimuli have a chance at forming any NEW impressions upon your mind. You will be like the newly hatched chick that sees a snake, and assumes it is its mother, and thus follows it around. Trusting it. Until it is eaten. Our minds tend towards such ‘imprinting’ of ‘knowledge’. Assumptions that are given the status of ‘knowledge’ simply as they are ‘familiar’ to us.

You can watch a video or read through instructions over and over, and still ‘miss’ key bits of information and instructions. Simply because you think ‘I know that already’. Simply because we tend to read what we EXPECT to find written, rather than what is actually THERE. Thus we ‘hear’ and ‘see’ what we expect to find, rather than find the NEW, surprising, challenging, and UN-expected, things that ARE there. Right in front of us. Screaming for our attention.

My brother reacted like Wittgenstein, when I ‘didn’t believe that a mere damp towel could produce such a horrible stench’, and asked my brother to help me carry my bed outside, assuming the bed MUST have been the source. I had ‘ruled out’ the damp towel as a POSSIBLE source of such a horrendous stench. He got angry with me for this inability to believe. In Wittgenstein’s case it was someone’s comment that ‘They couldn’t believe that it was still raining, after 3 days’.

We tend to be sceptical of the ability of others to trick us. Even more sceptical of the power of our own minds to trick us. And even more sceptical of the mere POSSIBILITY that a conspiracy that necessarily involved the active participation of hundreds of people, and the passive participation of thousands, could succeed. Surely SOMEONE would ‘blow the whistle?’ Right? But would YOU blow the whistle, and risk everything? Do you think such whistle-blowers are REWARDED? Do YOU known ANYONE who EVER stood up against authority? Against an organisation? Against a government? To defend a victim? Even of simple work-place mobbing and victimisation? I have experienced that last many times. Each time people came up to me in private and expressed their sympathy, as they assumed ‘I of course understand that they couldn’t possible risk THEIR job standing up for ME!’ These same people will later deny the possibility of ‘conspiracies’ by assuming ‘SOMEONE would SURELY blow the whistle on it!’ These very same people who failed to take the relatively MINOR risks associated with blowing the whistle on MY victimisers. My bosses. People in authority.

The most ‘hawk-eyed’ and ‘Rabbit-eared’ of us, trained and vigilant in our observations, will fail to ‘see’ things happening right before our eyes. It is not a matter of ability or self-discipline. Often someone has to point out things, before we can SEE them. Things that were, all this time, right in front of us.

Consider your favorite pop songs. And the lyrics YOU sang along to. Until you stumbled upon the ACTUAL lyrics on YouTube. And realised that, all these decades, you had been HEARING the wrong lyrics. Only NOW that you have READ the actual lyrics can you HEAR these actual lyrics, when you hear that song again.

Confidence can be our downfall, when it comes to observation, and learning. Being confident ‘we already know’ something. Or accepting the confident utterance of some ‘authority’ that ‘Almost everyone knows X’, merely on hearsay. It doesn’t matter how many people have been saying something, or for how long. How ‘traditional’ it is to believe it. How many billions of people, we are told, have believed it. No matter how many millennia, we are given to believe, people have been believing it. It is still just hearsay, until we can gather sensory impressions to back it up.

Hearsay exists at the highest levels of abstractions. It should never be ‘assumed’ to be ‘true’. Not based on ‘the weight of numbers’ or the ‘weight of public opinion’ or the ‘respected’ ‘authority’ of the speaker, who is merely repeating, SAYING, something THEY themselves merely HEARD, from someone else, in over 99% of cases.

That that hearsay was written down, ‘in a book’, should not make it any more compelling. For the most absurd of lies have been written down, ‘in books’, and repeated by millions, for thousands of years, and believed by millions, and accepted as ‘incontrovertible’ and ‘self-evident’ truths.

We must remain at the lowest levels of abstraction. That of sensory impressions. Concrete experience. Untainted by clever manipulation of those perceptions, by Neuro-Linguistic-Programmers, impression engineers, people whose profession it is to ‘construct and maintain myths’. Such as the chief author of the ‘official’ report on 911, whose Doctoral thesis WAS on just THAT subject. The construction and maintenance of myths. Like the official ‘911’ myth. Or that of ‘The Holocaust’. Or any other religions dogma that forms and expands upon the canon of The Cult of Judah.

Skepticism is THE basis of scientific method. To doubt. And REVISIONISM is THE basis of all technological, social, and scientific PROGRESS. Revising what we thought we ‘knew’. Updating our ‘knowledge’. Questioning all our assumptions about what we can know, and how we can know it. Reflecting, critically, on everything we THINK we ALREADY ‘know’.

So when such Skepticism and revisionism is made a crime, we know we are living under an Inquisition. That we are ruled by Cult of Judah Operatives. That our nation has been occupied. And it is time to oust the tyrants once more. Those pretending to be representing the will of the people. Who are merely representing the goals and ambitions of the Cult of Judah.

We must be eternally vigilant. We are NOT as clever as we believe. Our memories are faulty. And poor. We need to discipline our minds. Focus our attention. Ask ourselves ‘what question have I NOT asked?’ What ASSUMPTIONS have I been making?

We FAIL to notice huge amounts of data, because our minds cannot handle much data at all. Our minds operate to filter out MOST of the data. To attend to a very small amount of the data around us. To prevent our weak CPU’s from overloading and crashing.

Data already in our short-term memory must be allowed to fade, to make place for new data. So even though we SEE and HEAR the ‘clairvoyant’ actually soliciting, and GETTING, a whole lot of personal information from their ‘client’ at the start of a documentary, because there is so much NEW information in the documentary we are TRYING to attend to, and process, we soon exceed our 7 to 9 pieces of NEW information limit. And the MEMORY of those ‘solicitations of personal information’ is pushed out to make way for new information. Hence the ‘small talk’ associated with magic tricks and ‘mind readers’. The distractions that ensure that, by the time the ‘mind reader’ gets around to simply repeating what the client told them earlier in their interaction, the client, and even the observers closing attending and hoping to ‘trip up’ the ‘mind reader’ and ‘see through their scam’, has FORGOTTEN it ever happened. And so they are AMAZED at how much the ‘mind reader’ is able to ‘read’ from their client, who is, as far as we can RECALL, a total STRANGER to them!

Do NOT underestimate what a trained and experienced Neuro-Linguistic-Programmer, Impression Engineer, Public Opinion Manufacturer, Social Reality Producer, or similar scam artist, ‘mind reader’, ‘clairvoyant’, ‘crystal ball gazer’, con-artist, Politician, PR expert, Advertising professional, or ‘Priest’, can get away with. How easily it is to ‘pull the wool over our eyes’. I didn’t come to my awareness quickly or easily. I’ve had to train as a philosopher for decades. And I had great minds ‘pointing things out’ that became obvious ONLY in hindsight. HINDSIGHT is 20-20 vision. The ONLY 20-20 vision. Only AFTER someone has already POINTED OUT something, can we SEE it. Only after WE have invested a LOT of time and attention in SEEING something, do we suddenly SEE it. That ‘Eureka’ moment. After which experience we are astounded at how much we had MISSED. NOT seen. That was ‘right in front of our eyes’. Right ‘under our noses’.

The moment we rewind the documentary, and are FORCED to RE-watch the original interactions between ‘mind-reader’ and ‘client’, we gasp ‘How on earth could I have MISSED that’?

But we are RARELY forced or otherwise compelled to do this. To ‘go back’. To REALLY look at something. By a Professor we think has lost their marbles. Or by some ‘tin-foil hat conspiracy theory nutter’. Or some other ‘heretic’ or ‘apostate’ ‘whistle blower’.

And most ‘Eureka’ moments came after excruciatingly LONG periods of critical reasoning and observation. In fact most ‘discoverers’ had pretty much given up, as hopeless, their attempt to ‘understand’ something. Then, while doing something completely unrelated to their research, their minds on totally unrelated subjects, they ‘stumbled’ into and upon the INSIGHTS that made them famous. Or infamous. That led to lives of luxury, or cruel, violent, drawn-out, painful, deaths. They suddenly REALISED something. Something CAME TO THEM. They suddenly SAW something they had been missing. Their consciousness was expanded.

Of course AFTER the fact, it seemed OBVIOUS. Though no-one ELSE, up to this point, had SEEN it. Or if they had, they are kept silent about it. For various reasons. To profit from keeping it ‘esoteric’ and ‘secret’, and thus maintain a monopoly on the ‘knowledge’ and the benefits it offered. Or to avoid whatever ‘INQUISITION’ was in operation in their day. To avoid being brutally, cruelly, tortured to death, for challenging some orthodoxy. Some dogma. Some hegemonic article of faith. That brought the current hegemonic beneficiary classes their power, prestige, status, wealth, and other ‘benefits’. Cui Bono indeed!

Having stumbled upon such insights myself occasionally, I can attest to how ‘frustrating’ it is that people won’t even give credit where credit is due. Because once, after great struggle, effort, sacrifice, and risk, you EXPOSE something NEW, it can go one of two ways. Either it appears so obvious and self-evident that no-one values it AS a ‘discovery’. ‘Oh, that was obvious. THAT was no ‘discovery’. No GENIUS in THAT. You are just stating the OBVIOUS’. OR it is so challenging a fact to incorporate into their existing noetic structure, their current belief SYSTEMS, that they simple can not PROCESS it. For to PROCESS it would require them to totally restructure their entire belief system. To abandon so many beliefs that SEEM valuable and even ESSENTIAL. To perhaps give up certain benefits that the old beliefs ENTITLED them to. To LOSE beliefs that were comforting. Or ego-massaging. Crutches. Which when removed, would send their whole belief systems crashing down. And thus potentially threatening to send their whole WORLD crashing down. And so the new piece of information is simply DENIED. Refused. Rejected. Dismissed. Ignored. Censored. And the ‘messenger’ defined as ‘insane’ or ‘malicious’, to discredit them, and thus make it easier to dismiss their message. The new truth. As a lie. As a fabrication. Conceived in malice. The product of a sick and evil mind. And thus unworthy even of CONSIDERATION. Let alone acceptance. Let alone the TRIGGER for a revolution in thinking. In values. In social organisation.

Keep all this in mind when preparing learning materials. Limit yourself to 7 NEW items of information. Make sure the learner can easily access all the previous NEW information with the click of a link, to REFRESH their memory of it. And break down larger lessons into smaller modules. Try to find some MEANINGFUL ‘chunk’ you can teach. So they can DO something at the end of each lesson WITH what they have learned. So they have REALLY learned something. Activating their muscle memories. Providing as many ‘touchstones’ in as many ‘representation systems’ as possible, for later recall.

Then combine the modules into a project that uses all these new skills. To PRACTISE them immediately. And allow them to see what they HAVE learned, and what they need to go back and re-learn.

Remember to start teach ‘project module’ with a ‘fast forward’ showing what they are GOING to be learning how to do. Simply the lessons played at a fast speed, with any ‘digressions’ edited out. Like watching a video of a building being erected. To motivate the learner. To show them the VALUE of what they are about to learn. And to let THEM decide if they really WANT to learn this, now. Or maybe learn something ELSE that they can put into practise immediately, for their own current project.

Most people do NOT need to ‘know how to do everything’. That is a luxury most people cannot afford. And attempting it is climbing a very steep hill, with very high marginal costs, and very low marginal returns. So work out which skills offer the best ‘bang for their buck’. Which new information will provide the greatest marginal return, for the lowest marginal cost.

That said, some fundamentals MUST be mastered. And these are often the most ‘boring’ and ‘tedious’ to learn. So find exercises and mini-projects that make them immediately rewarding. This might mean moving between the ‘shallow’ end of the pool and the ‘deep’ end, even for lessons targeting beginners. Simply to offer some meaningful context for the lesson, and some immediate gratification.

I had to learn digital audio workstation software from a textbook. Starting at page one, and going through the chapters. Without any help from anyone. And it took a lot of time and I had to endure a lot of frustration. Sadly most teaching materials designers don’t feel obliged to offer much more than this sort of textbook approach.

What I plan on doing is taking all the reference lessons I have written up for myself, and starting my own video projects. And then explaining every step I took to produce the final product. So my After Effects materials will come last in this guide. After the basic theory that I will be using After Effects to apply.

While governments love throwing the hard earned tax payers’ money at formal training courses for unemployed people, and so on, where very little is learned, and the only real ‘winners’ are the bureaucrats who get paid to ‘pretend to be doing something’ and the course providers who get paid to ‘pretend they are teaching something useful and practical that will help the students find productive employment’, MOST people can NOT afford to attend formal training courses.

In any case, many do not thrive in that sort of environment. They find the on-line courses too badly conceptualized, too poorly designed, too badly presented, and even worse, only vaguely supported by any real HUMAN interaction from teachers and tutors. I’ve attempted to complete courses where you had to wait days for any response to any query. From tutors who are overworked, and often not trained in teaching at all. People who can DO, but not TEACH. Often those who CAN do, the best, make the WORST teachers. THEY originally found things too ‘intuitive’ to have to ever explain it to THEMSELVES, let alone someone without their natural gifts and talents. Or they did ‘learn things the HARD way’, but have completely forgotten all the confusion, misunderstandings, and so on, that made that process so frustrating and such a negative experience at times. Now if they could only remember what NOT to do, which mistakes of their OWN teachers NOT to repeat, they might stand a chance.

When I finally got feedback, I was asked what I did. I mentioned writing. ‘Ah, that’s the problem, you need things EXPLAINED IN WORDS!’ As if THAT was something they had NOT foreseen. Anticipated. Adapted to. And prepared for. As if you would not take it as a given that at least some of your student’s might require EXPLANATIONS of things, rather than just being told what they are to memorise for the online tests. Which you had to pass to proceed further. And for me, bore no relationship to the content of the course. So I had no idea what was going on in the heads of the course designers. I am too conscientious to continue along a path that held no chance of success, so I pulled out of the course. Doing so actually reduced the benefit I would receive. I have no idea if the government continued paying the fees, or even paid for that month. The conditions stated that you could pull out WITHIN the first month, and get a full refund. But like many people who've attempted to gain such refunds AFTER they'd paid up front, I bet the government were not repaid. I bet they didn't even try to recoup the money from the course. While they DID make every effort to force ME to pay them back, and return the laptop I'd gotten to DO the course. Mind you, this is after another course provider blacklisted me, after I made a few subtle complaints about THEIR course, after having almost finished it. I went to court. Of course I got no justice.

But back to putting yourself in the position of the teachers. Think about how frustrating it is, when you can do stuff, quickly, effortlessly, and masterfully, and then are forced to suddenly explain every 'baby step' imaginable in the process you are performing. When you can DO, it is almost unbearable to be forced to slow down and CONSCIOUSLY go through EVERY step in a process, in order to be ABLE to explain it. Though this is a different audience, who are hearing it FOR THE FIRST TIME, for the teacher, it is the UPTEENTH time. Often the person who can DO something, could not even consciously identify WHAT they are doing at any point in a process. And certainly NOT in the MOST logical and coherent way. Not in the optimal way for LEARNING it.

When you can DO something effortlessly, your fingers move by themselves half the time. You are not conscious of the order of actions. Often you are not even conscious of the actions you perform. They've become muscle memory. Ever tried to teach kindergarten? Or say you are a talented dancer, ever tried to teach some old fogey with no moves, and no rhythm? Frustrating. Most 'masters' thus would have brain embolisms, strokes, heart attacks, if forced to even TRY to 'slow down and explain EVERYTHING'. Those who can, DO. But often they can NOT teach.

Most 'masters' will also have their own 'ways' of doing things, and are usually NOT interested in learning 'alternative' ways of doing them. Even I hate going back to my own reference books and re-writing something that was already adequate, but not OPTIMAL. Where I had explained ONE way to do something, and then had stumbled upon OTHER ways to do the same thing which might not even have been better, but which offered learners who might not be able to 'grok' that one way, alternative ways of understanding and doing something. Using different representation systems. Different analogies. Different ways of approaching the topic.

Often a 'master' does things the 'worst possible way', in many ways. But because they can do it without thinking, fast, and easy, they never bother learning the more 'optimal' ways. Like learning to touch type with that slow old 'QWERTY' keyboard which was actually designed to SLOW DOWN typists, so the keys of mechanical typewriters would have time to 'strike' and 'rebound' before the next key COULD be struck, and so prevent 'jamming' of the keys. I have NOT yet seen a generic computer keyboard that did NOT use the QWERTY keyboard system, even though it is sub-optimal. First it was because most people using computer keyboards had learned to type on mechanical typewriters, and were fast touch typists, and they didn't want to have to 'slow down' again to 're-learn' how to touch type, by 'muscle memorizing' the NEW letter and character positions on the keyboard. Then the QWERTY keyboards became 'conventional' and 'standard', thanks to these people. And software programmers wrote 'Learn how to touch-type' programs for the outdated, slow, QWERTY system.

Now the Norwegians apparently managed to switch over from driving on the left side to the ride (or was it the other way around?), in one day. Anyone who has tried this will be aware that it is not easy. You really have to concentrate and think, rather than rely on 'muscle memory', which will leave you waiting at the traffic lights on the wrong side of the road, or driving down the wrong side of the road, before your conscious mind kicks in and says, 'Whooahhhh' hold on their buddy, let's take a moment to work out what we are doing here!

Given that soon voice recognition software might make typing itself obsolete, this little digression may itself soon become meaningless to readers.

And then software will adopt the same approach, and we'll be telling our music and video software 'Add -6dB of compression to the Bass Track' or 'Add a bit more warmth to that clip with color correction or balance', and the software will actually do all the work for us. Like auto-driving cars making it irrelevant which side of the road we need to drive on. There won't be a steering wheel at all. Today, with electronic steering systems, and automatic gear boxes, you could move the steering wheel to either side. But then, like me, you'd still be hitting your elbow on the door panel, as you, automatically, reach for the gear stick, which is on the OTHER side of you now.

The Cult of Judah have long ago taken on most of the functions of our conscious, critical, mind, by simply telling us what to think, and to feel confident in 'knowing' things, based purely on hear-say. Most of us didn't need much 'dumbing-down', but they applied that 'one size fits all', like applying compression without the 'make-up gain'. And then, to ensure the brighter minds, those 'transient's that can't be controlled that way, were 'pacified', they trained us all in the correct 'virtue signals' so that the few who WERE conscious of the discrepancies between 'the official narratives' of 'social reality', and 'the facts', would know when they should 'self-censor' and 'keep their mouths shut' and their 'more advanced and informed opinions to themselves'.

Back to finding a teacher, or learning materials. Most who can DO, either can't teach, or won't teach. Simply because it would be too frustrating for them, take a huge amount of work to learn how to do well, and they are most likely able to earn much more, taking the easy road, of continuing to earn their living doing what they DO, as their profession. Rather than teachings OTHERS how to do it. So we'd be left with those who can NOT really do their job THAT well. Those who couldn't get jobs in their chosen profession, adopting the 'fallback' profession of teaching. Pretty much the 'lowest' status profession there is. And the worst paid. Teaching. So we are going to get teachers that couldn't quite 'make the grade', pretending to teach as 'masters'.

But what if there was a person who began learning, FROM SCRATCH, a subject totally NEW to THEM. Who was extremely ambitious to GROK what they were doing. Fully. One who was NOT perhaps the most 'gifted' of students. NOT the 'natural'. Who did NOT find things 'self-evident' and 'intuitive'? You know, that student in your class who was always ASKING QUESTIONS when everyone else was pretending to already 'grok' it, and just wanted to move on, or get home, or get to lunch? That irritating person who didn't 'get it'. Who appeared stupid? A nuisance. Who people threw stuff at. Who everyone assumed was going to fail. But then somehow proved to be the BEST student, at the end? The one who topped their classes. The one who won the prizes. The one who produced the best final results!

What if that person suffered some 'Teague's Bridle' which prevented them ever succeeding 'in the real world'. So they found themselves free to learn everything they'd ever wanted to learn. And had stumbled upon free internet access, and YouTube, and Pirate Bay, and torrents, and so had access to almost unlimited learning materials and options? And what if that person was interested in music and film. In film writing. In recording and mixing. And finally had found themselves with dozens of complete songs, but no-one willing to work with them, because of that 'Teague's Bridle'. Maybe they were some sort of horrendous monster, you know, a VEGAN philosopher with PRINCIPLES and HIGHER REASON and thus HIGHER ETHICS. THAT sort of monster, that no-one can bear to be around, and just want to stone to death!

What if THEY were probably the FIRST writer to USE the pronoun 'They', to replace 'He' and 'She'! Finding it logical. Partly as a rejection of the silly 'Sie-tzen' and 'Du-tzen', and 'Gender' specific grammar in German and other European languages. But also after having been trained NOT to say 'you's', and then finding that same term in MANY old books?

And so that person, the one you'd have thrown stuff at in lectures, found themselves able and desperate to learn everything about film making. From scripts, to Screenplays, to camera techniques, editing, and 'After Effects', so that they could somehow make their OWN films. Starting with music videos.

Well I am that monster. Behold me in my awful glory. And this 'guide' is the reference I am writing for myself. And conscientious as I am, for anyone, like me, without the luxury of a wasteful bureaucracy spending 'other people's money', or a 'trust fund' to pay for film school. Or without the endless hours of time, and patience, required to teach themselves the way I have. The frustration was great. Often I could only bare a few minutes of some tutorial, because it was so complex and messy and disorganized, and constantly missed steps I only later could add myself, from other learning materials, or my own 'hit and miss', 'trial and error' attempts to do stuff. Often, as during my formal studies, I failed to 'grok' and 'get it' until the very last moment, when pieces seemed to 'fall into place' and 'make sense'. Finally.

So right now I am still in the first stages of 'crystalizing' and 'testing' what I have managed to 'glean' from a host of sources. To see what I have. What I still need to find. Which holes I need to fill still. Which gaps I need to 'span'. Then I will 'test' what I 'think' I have learned, to see if it works. Following my own instructions, word for word. To make sure anyone can follow them, and get the same result. To make sure I have not assumed I have written anything I actually haven't.

I am still finding the OPTIMAL way to PRESENT a set of steps. Such as providing a screen shot with notes on it. Then copies of the same screen-shot ZOOMED IN with additional notes, to further clarify.

One of the biggest frustrations is 'cueing' stuff in a video. Finding the place where something was said or done. To watch it again. And again. And again. So having actual written notes, for people like me, is key to the success of this project and enterprise. Notes that can be followed. Written representations. Along with the most carefully arranged 'screen shots' with further notes explaining the steps, in order, and what was done, when. Visual representations to complement the written/verbal ones. And to replace them for people who simply can't work with simpler verbal/written descriptions, and need to 'see' what they need to do.

I'd also include the actual exercises I was describing, as project files. So the learner could follow my description, and refer to the screenshots, WITH the actual completed project files to refer to. Projects, with all the files, that you can open, and delve into, and replicate. To get the hang of things. Where each part of the lesson deals with the same project. Explaining WHAT needs to be done, and hopefully WHY. So you CAN DO IT by following the lesson. With the least amount of frustration possible. And with an eye to minimising this frustration. By ANTICIPATING misunderstandings, and pitfalls, and confusion. And thus AVOIDING them. When I have done my job right, you will never be able to imagine how much frustration I have SAVED you. You will just take it for granted that 'this shit is really simple and easy to learn'.

And there's the rub. Lots of 'specialists' WANT to be given credit for what they have done. They WANT to be admired and appreciated. Along with their skills. They do not WANT it to 'look easy'. They cherish their 'status' as 'in the know'. They learned the HARD way. The long and frustrating way. And often they do NOT really want to make it easy for YOU. They resent people like me, who take all their 'specialist' 'high status' knowledge and make it accessible to everyone. Easy to understand and learn. Easy to do.

If your source of status, prestige, wealth, income, and self-esteem come from 'knowing something other's don't know, and want to know', you are going to be extremely parsimonious with sharing this knowledge. And the HARDER you can make it to acquire, the better for YOU. Because then your students will VALUE it more. And value YOU more. You will GAIN prestige and status. And your students, who had to sacrifice and endure so much, and PAY so much, in money, time, and frustration, are going to be loath to SHARE what THEY have learned from YOU, with others. So YOU will be guaranteed employment, and high status, and prestige, until someone like me comes along, and learns and shares what YOU guard like a Dragon guarding the virgin and treasure, with everyone, for almost nothing. Even for free. Because they are a FOOL, you might say?

But hey guys, in the end, it is NOT the mere 'technique' that will determine who 'wins the Oscar'. It is how 'on message' your film is, Vis a Vis the Cult of Judah's propaganda. And it is talent. And hard work. Long grueling, creative, artistic work. And THAT is something you can NOT simply teach. Though you CAN 'model' the behaviors of the most creative, artistic, successful film makers, song writers, designers, writers, statesmen, parents, athletes, teachers, and so on, in the end it is up to the person to APPLY all that. To apply THEMSELVES to their creative tasks. Which most people won't do. Because it is HARD WORK. It takes sacrifice. You have to take RISKS. You have to invest time and energy and focus. For long periods of time with zero rewards. Often with nothing but NEGATIVE feedback and hostility from others. Facing constant defeats and FAILURES. Losing most battles. Before you finally win the 'war'.

And if you are one of those 'stakeholders', don't fear. For without a marketing budget, very few people will ever stumble upon MY 'Guides'. So the 'Dragons' of the 'Teaching INDUSTRY' will be get to continue their 'same old, same old' for as long as they like. Wasting the precious time and money of students, parents, and tax payers, as they 'pretend to teach 'while their students 'pretend to learn'. And a few 'greats' learn DESPITE this, and manage to 'DO' as well. But THEY don't have my 'Teague's Bridle'. THEY will be too busy enjoying the fruits, the pleasures and reliefs and securities, of their 'knowledge', to even ever think about 'sharing' it. And most of THESE people are 'naturals' who probably would not, under any sort of pressure or incentive, be ABLE to EXPLAIN IN WORDS exactly WHAT they do. They can DO. They can't TEACH.

I am trying to do both. The world can stop me 'doing' in many ways. And it HAS stopped me 'teaching' many things, by banning many of my books. I've also been blacklisted from teaching. And from any Australian Government employment. So it may stop me doing both. But remember, that as with all my other 'Guides', THIS guide was written and conceived, first of all, as a reference for myself. That 'worst student' who is thus, under the right conditions, the most likely to become the 'BEST TEACHER'. Because they are lousy at learning. But committed TO learning. And so DO learn. After having suffered all of the confusions and misunderstandings and 'blank looks' that ANY student is EVER likely to experience, when THEY attempt to learn the same materials. Do you GROK?

Markus Rehbach
In exile in Estonia
Currently in a state of Emergency with the fake 'Corona virus' scare
This day, March 31, in the Year of our Cult of Judah Occupation, 2020

You can learn and use 'big budget' technique no matter how basic your equipment

For presentations or interviews, keep the lens around the eye level of the subject

Before we get into clever camera moves, we should consider the most basic of static shots. That of the 'talking head', shot from a camera stand. Key here is to keep the lens parallel with the subject's face, so the viewfinder is level with their ear holes, and the middle of the lens is pointing directly at the tip of their nose. The top of the camera lens will be about level with their eyebrows. Even slightly lower or higher can look weird, distract, and make the viewer uncomfortable.

That said, if you are deliberately going for a stylistic / artistic angle, make sure this is distinct and clearly intended, for effect, so the viewer 'understands' this, and processes the footage with this understanding. Such 'subliminally suggestive' camera angles are often used by perception engineers and impression managers to psychologically manipulate the viewer into accepting , unconsciously, many assumptions that are not rationally challenged, about the subject, so the subject is automatically, unreflexively, perceived in a certain way.

But just done 'ham-fistedly' any angle other than eye level can come off as a 'mistake' and 'incompetence' and distract from the message of the presentation, and make it a less pleasing experience for the viewer.

Psychological impact of camera angles and attitudes Vis a Vis the subject

Camera angles, distances from subject (zoom), and framing of a shot, have a HUGE psychological impact on the viewer. They allow us to 'see ourselves, as others see us', but also to 'see others as they see themselves', and to 'see others as others see them', and to 'enter into' different characters points of view / perspectives, and see things from THEIR viewpoint. This is how we can invite audiences to sympathise and even empathise with our protagonists. To FEEL what THEY feel. In the same way an overdubbed internal narrative lets us hear the internal voices in their heads. To understand things how they are understanding them. To perceive things as they are perceiving them. To SHARE their world, and their thought processes, and emotions, and thus engage in true COMMUNICATION. We can not only see their face, and body, to read the subtler body language cues that reveal, often while trying to conceal, but we can see what THEY are seeing, and how THEY are 'interpreting' the visible responses of others. THEIR body language. THEIR facial expressions.

Then there are the effects of literally 'looking up to someone' and 'placing them on a pedestal, resulting from a PEDESTAL shot. One taken from below the subject, literally LOOKING UP at them. Which suggests the figurative meaning of that utterance automatically. The idea that they are 'above us' in all respects. Our superiors. Super men. Monumental. Strong men. Deserving of our respect. Figures of authority. And so taller men have an advantage in business and worldly affairs. Until some 'harmless' short guy appears on the scene. Threatening no-one. Everyone feeling superior to them. Until they have quietly risen to the very top of the pyramid. Including 'buffoons' like Roosevelt, and his new Cult of Judah equivalent in the British parliament, who recently faked a 'Corona Virus infection' as part of the dramaturgy for THAT new Cult of Judah fake crises and platform for the introduction of the Proto New World Order, in the form of 'States of Emergency' with rules forbidding and preventing people from socialising, and meeting even to 'discuss' their suspicions about this new Cult of Judah fakery, and power grab, and excuse to impose what is virtually martial law, and dictatorship, upon the sheeple.

The reverse occurs when we 'look down upon someone'. WE feel superior. Patronising. Strong. So the 'shorter' colleague never appears to be a real threat or real competition to the taller fellows. Even as he slowly rises through the ranks. Climbing up the pyramid. No-one notices, as he is not considered a threat to anyone. He is not taken seriously. Everyone 'looks down on him' in that patronising manner. Putin is a shorty, and chose a good looking puppet president who is short, so you don't notice. That British politician isn't short, and he is quite clever, so HIS strategy is, like Cult of Judah President Roosevelt, to 'play the fool'. The buffoon. So his competitors don't take HIM seriously, as a potential threat for leadership and power.

So the pedestal shot, where the camera shoots down at, or up at, a subject, can make them appear masterful, imperious, enigmatic, powerful, and impressive, as we look up at them, or make them seem irrelevant, small, insignificant, powerless, weak, and unthreatening, as we look down on them.

When you deal with people in power, it is best to appear shorter than them. Or at least 'sink to their level'. To give them that impression. That you are no better than them. When dealing with children, it is best to 'crouch down, so you don't loom over them, threateningly. People in power are usually just adults who have never grown up, but merely gotten 'bigger'. Keep that in mind. They are, like Yahweh, powerful children capable of throwing temper tantrums, and crushing ant colonies, and torturing defenceless animals, and humans alike, then blaming their victim for 'provoking' them by NOT behaving exactly as their whims dictate, from moment to moment. Infantile tyrants. The ones Cult of Judah myth writers claim we were modelled on. Hardly paragons of animals. More 'terrible twos' with adult bodies, and access to all manner of cruel devices for inflicting pain, and satisfying their own arbitrary whims, with no empathy for the suffering of their victims, who exist, in their minds, merely to SERVE their own arbitrary whims. So that 'their will be done'.

A 'reveal' is a powerful moment in an opening scene. And also 'withholding' that reveal, can be used to build curiosity, suspense and interest, and get audiences to invest emotionally in your film, from the start. You can add grandeur and glamour to the everyday, simply by framing the shots in a particular way, with particular camera set ups, camera angles, and editing particular shots together. Taking the audience on an emotional / affective journey. A ride. Inviting them to 'enter into' an 'experience'. To suspend disbelief. To suspend judgement. To WANT to experience our 'reel' life as 'real' life. To enter into it. To immerse themselves in it. To lose themselves, for 90 minutes, in it. To enter another world WE have constructed for them. To BECOME the protagonist.

Choosing your background for 'talking heads' shots

Position the camera and subject, where possible, so that the colors and lighting behind the subject contrast with the subject, throwing them into relief, and clearly defining them as foreground. Blue is the color of choice, as it contrasts so well with natural skin tones. The background should be darker, less bright. If you can, have the subject dress in colors that will contrast with the desired location background you have selected, where you have no control over the setting. That would be dark coloured clothing for a light coloured background. Blue clothing for a pink background. Skin-tone clothing for a blue background. The aim is for the subject to 'stand out clearly' from the background.

In the same way you want the audio to stand out from the background 'noise'. If outside this often includes wind noise, so be sure to have a 'solution' on hand, to cover the microphone, or shield it from the wind. Digital audio has a very low noise floor, so self noise is not a big issue. You can record at relatively low levels, and then 'normalise' the audio in post-production, so focus on getting good quality audio, rather than maxing out the level meter. The closer you can get to a source the less background 'noise' you will pick up.

As with audio, you want your TARGET visual and audio to be the focus of the listeners' and viewers' attention. So consider what is going on in the background. It may ADD to the interest of the shot. Or it might distract the viewer from the presenter. It might enhance the shot, by providing relevant context and literal 'background'. Or it might be irrelevant and confusing and distracting and irritating. With today's 'live news reports' actual live footage, which shows what REALLY happened and is REALLY happening, can distract from the fictitious, propagandandistic, LIES that he 'false news' presenter is making in their mis-representation of the facts and falsification of history. This is why most 'live news' is filmed with a presenter standing against a 'green screen', or an entire 'news team' sitting and walking around in a 'green room'. So that ANY desired background images can be placed behind them. Often totally fake. Like airplanes added to 'news' footage using CGI animation. After the actual 'live' helicopter' that was hovering directly opposite the world trade centers had 'filed its report' stating 'I didn't see any planes'. THAT news reporter was killed soon afterwards in a highly suspicious car accident with an 'unidentified black car', to ensure all future 'reports' were 'on message'.

So construct a good 'fit' between the background behind your presenter/s, and what they are presenting. Either a neutral one. Or one that is 'on message' and enhances the message, rather than distracts from it. One that adds to their 'authority' as a 'trusted news presenter' or even 'journalist', though I can't claim to know of a SINGLE real investigative reporter. The real ones ask the 'wrong' questions and present the 'wrong' information, and end up on the 'wrong' end of a gun, or 'unidentified 'large black speeding car at an intersection.

Put distance between the subject and their background

Don't mention that your supposed 'whistle-blower' has been working for the CIA and/or FBI for a very long time. Put some distance between 'inconvenient' information and the current 'persona' they are acting out for the public today.

A more shallow depth of field tends to naturally separate the subject from the background, which is ideal for most 'talking head' presentations. The background tends to blur out a little, which reflexively makes the subject APPEAR clearer and sharper and more well-defined, and this naturally draws the viewer's eye towards them.

Like a simplistic lie attracts more people than a messy, complicated, truth.

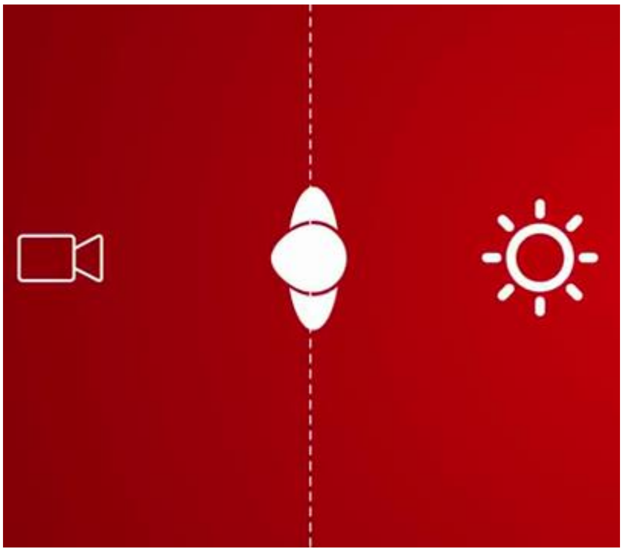
Remember that CONTRAST is key to ALL human perceptions and impression formation. Our senses are drawn to ATTEND TO CHANGES in stimuli, more than to the absolute, consistent, stimuli. Thus a CHANGE in something is perceived quite readily. A CHANGE in pitch, modulation, loudness, intensity, brightness, color, temperature, and acceleration, are all immediately perceived. Monotonous impressions DULL the senses, to the point of 'falling asleep'. Whereas constantly changing children's programming is designed to maintain the child's attention.

One old Hollywood trick was to build sets with lower than life doorways, so that when the 'action hero' was framed by that doorway, standing in it, entering and exiting by it, they appeared literally 'larger than life'. As many Cult of Judah Operative actors are quite short, there has always been a lot of work for other 'short' actors they can work with, without exposing this fact. The opposite might apply with a taller woman, to allow her to APPEAR more 'petite'. Politicians surround themselves with idiots to appear 'reasonably intelligent' in comparison. For all things ARE relative, in the world of sensory impressions.

So if your subject is standing quite close to a wall or other object, see if you can put a little more distance between them and that background backdrop. 1.5M (5 feet) is a good starting point.

AGAIN I AM CONFUSED AS TO WHAT 'SHALLOW DEPTH OF FIELD' REFERS TO…AS WE SEEM TO BE DEEPENING IT???

Positioning the sun Vis a Vis subject



A basic rule of thumb is to mentally draw a line through the ears of your subject, from left to right, as they face you. Now turn them and move the camera until the sun is BEHIND this imaginary line. Usually this will only require you to move slightly around the subject, and have them turn slightly, so they are always BETWEEN the camera and the sun.

The result is a stronger contrast, and greater depth, between the subject and the background. Also the sun will not be falling in the eyes or directly in the eyes of the subject, distracting them, causing them to squint or appear uncomfortable (unless that was your intention, as when Cult of Judah media filmed Nixon), and or on their face, adding harsh glare which can play havoc with ISO settings, and throw shadows across the face, distorting features.

The same 'rule of thumb' applies when using artificial lighting indoors and outdoors. Keep the 'spotlight' BEHIND the subject, rather than having it 'shining in their face'. The mantra must be 'BACK light' your subject.

When using some natural or artificial light source, such as a window, or an LED sign or shopfront window lighting, place the subject at an angle to the light source, and use reflectors and 'negative fill' (dark reflectors / dampeners) to balance out the light, so it is roughly equal either side of the subject, lighting them equally from both sides, and so the background is evenly lit either side of them.

With audio trust your ears, but with video trust your spectrograms

Listen to the audio you are recording, through headphones, in real time, AS you are recording it. Often your ears will detect noise that is not obvious from merely LOOKING at a spectrogram.

However the opposite holds true for video. Spectrograms and histograms can reveal much more than the naked eye, monitoring on a video monitor. This is even more the case if you record in RAW mode, the mode that provides the MOST detailed information and which allows the GREATEST flexibility in post-production.

Shooting long, medium, and short-range shots, from multiple viewpoints, angles, and positions, to edit back into compelling viewing

Before you even worry about image quality, consider how you are going to 'frame' your shots. Consciously consider what will be the foreground, midground, and background, to each shoot. And how much space within each frame, these will take up. For different shots the subject will take up more or less of the frame. Extreme close-ups fill the frame with details of a subject's face alone, or with some detail of an object, and thus are completely taken up with foreground. Wider panorama shots fill the frame with a lot of foreground, midground, and background. Camera angles, together with zoom, create the compelling 'feature film' 'look' we expect of big budget blockbusters. But it is only really laziness and lack of ambition that prevent even the lowest budget, mobile phone camera operator, from emulating much of the 'Hollywood magic'.

You should not expect to be able to shoot a scene once, from one angle, and end up with something compelling. Expect, and thus plan for, multiple re-takes of the same scene or sequence, from different angles. From different viewpoints, and 'points of view'. Sometimes you can place cameras 'out of shot' to record the same take from multiple angles. Other times you will need to repeatedly film the same scene, from the different angles and 'close up' and 'far off' camera positions. Often moving towards or away from the subject, while ‘pulling zoom’. And so you can anticipate that a simple sequence can take many hours to film. So that you have the footage that you can, in post-production, edit into a seamless, compelling, sequence. This time showing just the one ‘run through’ of a scene, but from multiple perspectives, viewpoints, angles, and distances.

Action scenes commentary from (writer-director-editor) Matt Nix's 'Burned' t.v series

One minute can take 6 or more hours to shoot. Each 'punch' or kick is filmed with wide, medium, and close-up takes. These are then edited into one punch scene. A typical 6 punches are filmed for each take, with 3 takes, with 3 different camera and lighting set-ups. So this means they are filming 27 punches from each angle. And as they usually do this from 10 different angles, it means 270 punches have to be ‘thrown’ for each punch that the audience sees in the final edit.

For scenes where someone is shot, a ‘Squib’, a blood packet with a small explosive charge, is triggered for the entry wound, and for the exit wound. Again this ‘shot’ would be shot from many different angles, viewpoints, with close, medium, and long shots. So the one ‘shot’ is repeated, and filmed, over and over.

No matter what your budget, in terms of equipment, you can take the time to ensure you have a variety of shots, from different angles, perspectives, and distances from the subject and action. You can then edit these to form one interesting sequence from. Expect that most of what you shoot will ‘end up on the cutting room floor’, so to speak. Edited out.

Any scene can be shown from the point of view of the listener, showing the person speaking, then showing the reaction of the listener, and the reaction of the speaker to this reaction. So even ‘talking heads’ scenes become ‘action’ scenes of a sort. You can switch to a shot of both listener and speaker. Then cut to the reaction of someone nearby, eavesdropping. And then the reaction of the interlocutors towards that eavesdropper. As they lean in toward each other, for greater privacy. You can zoom in to a tight close-up of something that has caught either interlocutor’s attention, such as their interlocutor’s lips, or their hands, or something germane to the conversation. One might look out the window, so we shoot them looking out the window. Then shoot from their perspective, what they are looking AT. Then shoot their interlocutor’s response to noting that their interlocutor’s attention is on the window, as THEY turn to look at what the other is looking at. Then we cut to what they are both looking at. Then we cut to one of them turning back to look at the other. Then we cut to the other turning their attention back to them.

So even for the simplest ‘talking heads’ sequence, we could film the same interaction over and over, from a variety of distances, angles, and perspectives. Following the speaker’s gaze. Observing the reactions of the listener. Following the listener’s gaze. Watching the watcher then cutting to what they are watching. Observing someone react to something, then cutting to what they were reacting TO. Then cutting back and forth between interlocutors. And even the perspectives of people just happening to walk by. Or who are sitting nearby, overhear something, and turn to take a look at our interlocutors. Then cutting to what THEY happen to see, from THEIR perspective, sitting nearby.

Consider a car chase sequence. You can shoot from behind the moving vehicle, from an ATV. Or from a pole attached to the rear of the car, positioned so it is not visible in the shot, or easily ‘masked out’ in post-production. You can shoot from the side, into the car window. From inside the car, looking out, through any of the windows. From the perspective of the driver. Looking through the rear view mirror. Looking over their shoulder. Looking out the side windows. You can follow the action from a drone flying high above, to show the road ahead, or behind. Or flying just above. Or doing a ‘flyover’ and flying on ahead, showing us what we are driving towards, and revealing the dangers up ahead, and building the tension.

You can film someone running upstairs, first from the entry to the stairwell, watching them run into the stairwell, then from just behind them, then from the runner’s perspective, then from the next landing up higher, watching them run up the stairs below, and then passing the camera, running on up the next landing, until we see the top of the stairwell from behind the runner, then from their perspective looking up, then from the top stair looking down, then from just outside the top of the stairwell, on the rooftop, as they exit the stairwell, then as they exit out into the dazzling light of day, from their point of view, then from far above the rooftop, looking down, as they exit out onto the rooftop, then back to their perspective, as they look around the rooftop. Just practise imagining different angles and distances and perspectives you could film anything from, and put together a ‘storyboard’ in your mind. Then film enough of each of these ‘storyboard’ scenes to build the sequence, in post-production, during editing.

Remember that you may need to build, take down, and re-build, new camera and lighting set-ups for every shoot. And move between dolly-based cameras with dolly operators, crane-based cameras with crane operators, Steadicam operators, and ATV based camera operators, and camera drone operators.

Given the importance of high quality audio, you will probably be over-dubbing all the audio anyway. But you will still want to take ‘Foley’ audio and ‘background’ audio, to edit into those overdubs, for increased realism and authenticity. If you intend using actual live audio, you will need to think carefully about WHEN the audience will be seeing the lips of the speakers moving, and when not. To ensure you get clear audio at least for THESE shots. But the sort of audio clarity movie goers are used to comes only from overdubbed audio, recorded in a studio, rather than ‘live’ during the ‘shooting’ of the scenes.

The ‘extra’ commentaries from the television series ‘Burned’ really opened my eyes as to how much ‘shooting’ goes into the relatively few minutes of screen time we watch. If it takes six hours of filming for one minute of 'on-screen time', and thus 6 hours of REAL time for one minute of REEL time, then consider that your final product will be enjoyed by millions of people, for decades to come. So surely if it takes 90 x 6 x 60 minutes of REAL time to record the footage for 90 minutes of REEL time, the investment will be worth it. Unless of course you think your script is NOT worth this sort of investment. In which case it is really wrong of you to waste 90 minutes of your viewers time with it, no matter how cheap and quick it was for YOU to produce those 90 minutes. Better to leave that project, and look for one WORTH the investment of time and energy it takes to turn a great script into a great video / film / television episode.

Many great studio albums have been produced in the same way. High level organisation skills will be necessary to keep track of the footage, to make each scene and sequence easily discoverable and navigable. Hence the old-school 'clapboards' with their scene and take numbers. Be sure to organise files by scene and shot description, in folders. And to give each take a logical and descriptive file name.

When you consider all the time and effort and expense invested in every other area of even a low budget film, it is hard to accept that many budget film producers make so little effort when it comes to the sort of thing we've just been considering.

Hand-held shooting tips a.k.a 'camera yoga'

Let's start with the simplest of skills. Shooting footage with no more than a mobile phone or other consumer camera. Without a stand or any other sort of 'stabilisation' device. Where the only 'hardware' is your body. And the only 'software' is your brain.

Start thinking of your bones as a potential tripod or stand. And always use the largest muscle group you can, to perform a tilt, pan, or elevation shot.

For close-up shots, you will require very little movement of the camera, to get the required shot. A horizontal pan or vertical tilt takes only the minutest of movements. Moving horizontally you will quickly 'slide by' the subject. 'Pushing in' and 'Pulling out' can often be achieved by pushing your upper body forwards or backwards, from the chest, leaving the hips and legs in position. So you can start with your upper body pushed as far back as is comfortable, then slowly push your upper body forward, and get a great 'push in' shot. Do the opposite for a 'pull-out' 'reveal' of your subject. Most of the time you will not have to move your hips and legs, let alone your feet. If you need more extension, straighten your elbows gradually to straighten your arm, while keeping the lens parallel to the subject, and at the same height.

Lock your elbows into your sides, or hold your wrists firmly up against your chest, and rotate your upper body from the hips, to achieve a smooth, stable, fluid, continuous, pan.

Practise using JUST your wrists and hands to 'tilt' the camera up and down.

Train your muscles and balance to be able to elevate your upper body, and move the camera vertically, up and down, by bending at the knees.

Improve your balance through practising leaning forwards and backwards from the hips, while keeping the camera parallel with your body, so you get a smooth arc from ground to sky.

Then see if you can 'ninja glide' forwards or backwards while carrying out one or more of the above moves.

Then practise 'ninja sidling', walking alongside, to the side of, your subject, while filming.

Once you are able to walk sideways smoothly enough to film, mark out a circle around your subject, and 'orbit' them, by following its circumference with your body, as the camera continues to point directly at the subject.

Practice 'vertical orbits' that describe a vertical circle, so even if your subject is stationary, you get an 'action shot' of them. As the camera describes the circumference of a circle, see if you can keep the lens parallel with the subject, facing them, at all times.

Then see if you can 'pull focus' at the same time as you perform these more complex combinations of choreographed moves.

It is up to you to practise all combinations of these moves and thus camera shots, using your bones, and core muscles, to ensure an action as smooth and fluid as any Steadicam.

You will essentially be performing a new form of yoga or Tai chi and getting a great workout. You will develop muscle tone, balance, breathing, and strengthen your core. The result will be better posture and fitness. So you will win all around.

When you can perform them individually, and standing still, introduce the 'push' and 'pull' and 'dolly' shots, by walking forwards and backwards and sidewards. Practise following a subject from in front, walking backwards, from behind, walking forwards, and from the side, walking sidewards. Plan shots with storyboarding. So you have a clear concept of the various shots you will edit together. Of the person approaching. Moving along with them, filming from the side. Then the person moving off. Adding pans and tilts as transitions. Shooting from low down to the ground, to make even the most mundane of strolls into an 'action' sequence.

Steadicam operators become known for their work, and much sought after. Matt Nix even arranged shoots for his hit television series 'Burned' to ensure his favorite Steadicam operator was available for them. You will be in constant demand if you manage to master all these moves. Even if you end up using the best professional Steadicam available, your natural ‘moves’ will contribute to your performance, and the directors joy, and desire to hire you again and again.

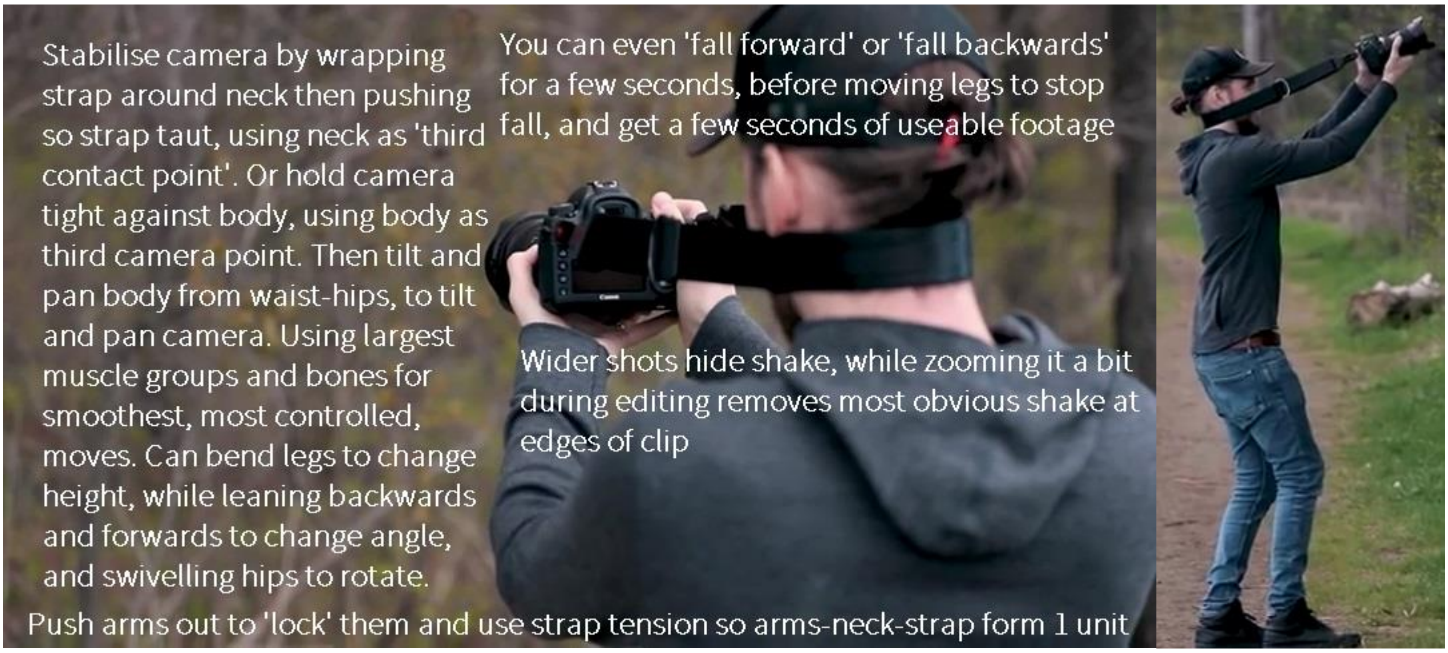
Find the right feet positioning that works best for you, keeping your feet about should length apart, and probably one at least slightly forward of the other. Usually taking smaller steps helps keep each step under perfect control.

Weapons handling training teaches us to use our bones, rather than our muscles, to aim a rifle. And to employ the largest and thus strongest, most resilient, most stable, muscle group we can, to perform an action. Muscles tire quickly and become unstable. Whereas two bones resting on each other can remain in a fixed position indefinitely, without tiring, or moving. Acting like a camera tripod or stand. Think ‘multiple points of contact’ and you get the idea. A stand has 3 legs. So bringing your elbows in tight to your hips, or diaphragm, you have two points of contact. Adding a strap around your neck and pulling it taught, by pushing your hands out and down, while maintaining the points of contact between elbows and hips / chest, adds the third point of contact.

Pulling your arms in, so the camera is held tightly against the body, turns your entire body into a camera stand.

Experiment with which positions work best for you. Find the most stable position you can maintain without any shaking or wobbling of your muscles, limbs, and through them, the camera.

Extending your arms until the strap is taut, keeps your arm muscles under equal, CONTINUAL tension. Push out hard enough, and produce enough ‘forwards’ tension, and this will defeat / prevent any other forces from de-stabilising your position. You should, using this technique, be able to maintain a steady position for long enough to take a planned shot



Stabilise camera by wrapping strap around neck then pushing so strap taut, using neck as 'third contact point'. Or hold camera tight against body, using body as third camera point. Then tilt and pan body from waist-hips, to tilt and pan camera. Using largest muscle groups and bones for smoothest, most controlled, moves. Can bend legs to change height, while leaning backwards and forwards to change angle, and swivelling hips to rotate.

You can even 'fall forward' or 'fall backwards' for a few seconds, before moving legs to stop fall, and get a few seconds of useable footage

Wider shots hide shake, while zooming it a bit during editing removes most obvious shake at edges of clip

Push arms out to 'lock' them and use strap tension so arms-neck-strap form 1 unit

All this will take practise. And experimenting with what works for you. And meets your needs. But then it will also take time and energy to practise to learn that new Glidecam. And a Gimbal can have an even longer, and much more frustrating, learning curve. And while the Gimbal is a mechanical device, which is effected by rain and heat and wind, and requires power, and thus batteries, and spare batteries, your arms are naturally adapted to the task. And even a Glidecam takes up space in your backpack. Assuming you remember to bring it to every shoot. Most likely sooner or later you are going to need to fall back on using the techniques described here, at one shoot or other, due to weather, forgetfulness, or flat batteries. So take some time to learn them. Practise makes perfect.

In any case, learning these techniques will serve you well with any mechanical device you decide to add to your filming kit. You’ll become an expert ‘ninja floater-glider-walker’. You’ll develop smoother, more fluid movements and improved balance and even breathing. These will become muscle memory. And soon you won’t even have to deliberately, consciously, think about them. They’ll become your new, natural, automatic ‘modus operandi’.

Now we focus on the next point. Use the largest muscle groups you can engage to perform any action, to ensure the smoothest, most controlled, fluid, and stable, moves, with the least muscle fatigue. So you can hold the position for a longer time. And repeat the same shots, using the same sort of position. You can turn at the hips to ‘pan’ the camera left to right. You can ‘tilt’ by leaning backwards or forwards from the hips, or knees, to get a smooth, stable ‘tilt’ shot. Looking up at the sky, then tilting downwards, till you are pointing to the floor. You can ‘ninja walk’ left and right and become a human ‘dolly’. You can (place one foot a little in front of the other, and a little apart to maintain balance) lower and raise the camera height by the distance you can comfortably ‘crouch’, to do simple ‘pedestal’ shots. You can combine these actions, with practise, to ‘tilt’ and ‘pan’ and ‘dolly’ at the same time. And get footage that any Steadicam operator, or crane operator, or dolly operator would be proud of.

You can get even more ambitious, and climb up onto stable objects and get ‘crane’ and ‘overhead’ shots. You can jump down in a controlled fall, from a small height. You can ‘fall forwards’ or ‘fall backwards’ or ‘fall sideways’ in a controlled fall, for a few seconds of useable footage.

For shots where you need to walk forwards or backwards, your aim will be to minimise camera shake, so you might want to hold the camera as shown above, with a lanyard or camera strap placed around your neck. Or you can bend your arm, and warp the lanyard/strap around your upper arm and forearm. The idea is that the tension produced in your arms constrains them to their horizontal and vertical planes/position. And under tension they are less likely to simply wobble or shake.

Alternatively, if you plan on walking, and want to minimise camera shake, and other movements, hold the camera as loosely as you can while still having a secure grip, close to your chin, in your fingers rather than your hands, with your arms bent and relaxed, and your elbows pointing down, and your hands up, level with your chin. Be sure to cradle the camera relatively loosely in your fingers, to decouple vibrations travelling up from your feet and body, and to the camera, as you walk. The less firm your hold on the camera, the more of the vibrations that will be dampened by your legs, body, hands, and fingers, before they can be transmitted to the camera. Find a position that is comfortable, that you can hold without much effort, ensuring the minimum muscle tension and thus fatigue. So you can maintain the fixed position for longer, without shaking.

Practise walking ‘ninja style’, where your shoulders remain level with the ground, rather than bobbing up and down. This is a form of walking practised by martial artists, long distance runners, and is the natural gait of people who walk long distances. It is efficient. All effort is directed at forward movement. No energy is wasted raising and lowering the body. The result is effortless walking for extended periods, with less fatigue. And in terms of hand-held, and even Steadicam filming, the result is a steady, smooth, fluid, level, gait. The equivalent of built-in stabilisation. And thus stable footage. You roll from heel to toe, at each ‘footfall’. Some people find it comfortable and profitable to keep their knees slightly bent the entire time, to maintain the same distance shoulder-to-ground during each step, and as they change from foot to foot.

Experiment and find what works for you. Of course always first check there is nothing you might fall or stumble over. Have a friend do ‘crowd control’ to prevent collisions in public spaces. And have someone keep a close lookout for any bicycles, cars, or other potential hazards that might possibly come into collision with the camera operator, who is ideally focussed on framing, and setting up, the perfect shot, and realising the ‘storyboard’ you have drawn up, or which they have in their head.

Choose appropriate footwear and clothing that is soft, shock absorbing, flexible, and allows you complete freedom of unrestricted movement. And if you intend using the audio captured while filming, ensure your clothing is quiet, and won’t ‘rustle’ and ‘swoosh’ as you move.

All other things being equal, use the widest lens you can. And to buy or borrow an image stabiliser lens, if you can swing it.

If the terrain allows, film from something with wheels. A scooter, a bicycle, a motorbike, an ATV. So you ‘glide’ like a ‘dolly’ on tracks.

Filming at 30fps for playback at 24fps will help ‘smooth out’ any camera movement, making it less obvious, and less distracting to viewers. If you don’t need to play the footage back in ‘real time’, try 60fps, so the footage is viewed at less than half speed, making it magically smooth and fluid.

Continue a shot, and ‘follow through’, past the point you need, in order to avoid any abrupt stopping and starting in your actual footage, like you would with a tennis or golf swing, snooker shot, to ensure the complete action is smooth and fluid.

Experiment with ‘controlled falls’, in which you place a camera on a stand with a lanyard or strap connected to it, and then, by feeding out the lanyard/strap, allow the stand to smoothly and fluidly fall towards the ground. Or do the same with the camera pushed up against your chest, as you allow your body to fall forward, waiting for the last moment to stop your fall by stepping forwards. Experiment with falling sideways.

You can attach your camera to a pulley, and tie it to something above you, then raise and lower it for elevation shots.

Or to get a smooth, fluid, ‘dolly’ shot, to follow, from the side, or front or back, a moving subject, tie a line between two trees or posts or other fixed vertical structures, and place your camera on a pulley hanging from this line. Turning it into a ‘flying fox’ for your camera. You can then, if there is a slope, allow the camera to fall at a controlled rate, by releasing the pulley at the speed your require, or pull the camera along at the same speed as the subject, and get a smooth shot of them running, from all sorts of angles. Vary the speed and distance from the subject in several different takes that you can later edit back into one seamless sequence.

If you become proficient at framing a shot, you can break up one long shot into many smaller shots, and move between each. So you ‘leap-frog’ from one hand held shot to the next. Extending your arms as far as you can, before taking a step, and repeating the extension. This way you can cover a lot of ground. You edit out the steps later, so there is no camera movement in the final sequence, just the ‘push-ins’ and/or ‘pull-outs’.

In order to keep the subject at the same height, choose two vertical points in the shot, and focus on these two points each time you move to start the new shot. If you keep these two points at the same position in the frame, when you edit all the individual shots together, they should line up. The result will look as if you took one long shot, which covered the entire distance in one recording sequence.

With hand-held shots, we are using the joints of our body, the ankles, knees, hips, waist, chest, shoulders, elbows, wrists, and finger joints, as one 'Leviathan' gimbal with multi-point articulation. We are using our bones and joints for support, rather than our muscles. And elbow tightly tucked into our hip can hold our arm and camera in position without fatigue, or shaking. A muscle group applying tension constrains any other movement, stabilising our camera. We keep our muscles mostly for the small motor movements for the mostly subtle tilting and panning, along with the 'core' muscle groups for rotating from the hips, again for tilting and panning.

To allow the audience to 'enter into' the action, you can have a stunt person hold the camera while they perform actions which simulate what the actor might be expected to be experiencing, during some dramatic action. You can place a camera in a car that is going to be 'crashed', so it is flung against the windscreen, and edit this shot into a car crash sequence, to show the impact from a passenger-victim's point of view / perspective. Using it as just one of many shots of the same scene, either actually taken of it, or later simulated to suggest they were taken during it.

You can buy an after-market 'image stabiliser lens' as an accessory for many cameras. But check if your camera has any similar, built-in, mechanical image stabilisation, or software stabilisation. Mechanical stabilisation is superior, as it doesn't need to 'crop' your footage, as the software does. If buying a new camera, consider that some smart phones come with mechanical image stabilisation, among many other useful features, and are become more and more affordable. So check the specs of any phone you are considering buying for such 'goodies'.

As a last recourse, and to 'salvage' footage that is 'almost good enough', try image stabilisation software, such as 'warp stabiliser' in After Effects. The stabilisation often comes at the cost of 'cropping' of your footage. So if you anticipate having to use this software, keep this in mind, and plan ahead. Allowing a wider angled shot, using the widest lens, provides more 'headroom' for cropping the images, without losing essential details needed to make the shot useable. If you zoom in, and position the subject in a corner, then you may lose part of the subject, after cropping. Because the software works by repositioning the frame, moving it up and down, and left and right, to compensate for the same movements of the camera. The greater the movement, the further the frame must be moved, to make it appear stable. And the more of the shot will be cropped as a result of this.

When filming something live and unscripted

In situations where you have no control over the subject, and they could do anything at any moment, and you want to be sure to catch it, always adopt a pose which you can move out of quickly. Think like a sniper seeking a 'hidey hole'. It is not enough that the enemy can't see you. You need to be able to act immediately. You are not there to hide. But to be EFFECTIVE.

So never sit down on your ass. Instead CROUCH down. So that if the subject does something unexpected, you can quickly move to keep them in frame. Bend at the knee. Sit on your heels. Squat rather than sit with your butt on the ground. Keep your balance. Remain free to change from one position to another, fluidly, and smoothly. Gracefully. While keeping the subject in frame. Without jerky movements. Or discontinuity.

Be aware of your environment, so you don't have to take your eyes off your subject. Check carefully behind and around you, before you start shooting, for any potential hazards you might trip over. Practise ZEN. Be here, now. Be an 'active' observer. Anticipate potential hazards, rather than reacting to them too late. Be able to move spontaneously and smoothly from your current position to any other position, to follow the action, so that the transition between positions is smooth and fluid.

Never lock yourself into any position, so that you have to stop shooting, or even take your hands off the camera and your eyes off the subject / viewfinder / monitor, during the shot.

This is a part of 'film yoga' that will strengthen your muscles, improve your balance, and your 'environmental awareness', even for planned, predictable, scripted shots. Your moves will become more graceful and fluid, and result in smoother camera work.

And if something 'unscripted' happens, you might be the only camera operator to 'catch it on film', thanks to your 'camera ninja moves' and 'film yoga'.

Filming yourself

So far we've dealt with filming other subjects. But many of us will, at some time or other, want to film ourselves presenting or performing. So we will need to work out how to film ourselves.

Most mobile phones today have 'selfie' cameras on the same side as the screen, so you can use the screen as a monitory, to see what you are filming, as you film yourself. So when comparing phones for future purchases, note how good the 'selfie' camera is. Usually the 'main' camera has much higher resolution than the 'selfie' camera. To film yourself the selfie camera resolution is what will determine the quality of your footage. Also check to see if options are available to adjust the 'white balance' (use a sheet of white paper), ISO, fps, and even real or simulated 'aperture' and 'shutter times'. You may set them all to 'auto'. Or you may what to experiment with the settings. You might choose a different resolution, or the camera may automatically adjust the quality reflexively relative to other changes you make. So pay attention to what happens when you change one variable, to the other variables you did not consciously decide to change. This is the real cost of any choice. The 'opportunity cost'. A 'negative externality' of choosing one thing. It comes at a cost. At the expense of other things you now can NOT have.

If your camera has a RAW option, consider using it. The footage you shoot will probably LOOK nasty. But RAW offers you the maximum control for color grading in post-production. The final product can often be superior to anything you could achieve using other formats. Just don't be put off by the 'odd' look the 'raw' footage has BEFORE color correction. What RAW does is capture the maximum amount of information possible. Information that later gives YOU the power to manipulate the 'reality' that you 'construct' as part of your final 'look' and 'feel' for your project.

Many 'action cams' have a Wi-Fi function that allows you to use your mobile phone as a monitor. You simply download an app to facilitate this.

If you 'zoom in' on yourself, while holding the camera on some form of 'selfie stick' or pole, the viewer won't see your extended arm, and can be given the impression that someone else is filming you from in front, and walking along with you. You can do this in post-production too, to remove the 'tell-tale selfie clues' from the shot. If you act like you are being filmed, and experiment with ways to hold the selfie-stick, or pole, or attach it to a harness, so that it is not as obvious, you will make this trick work, with the least editing, or zooming. Find an angle and set-up where the selfie stick, and/or your arm holding it, is not in the shot. Not in the 'frame'.

The establishing shot

A great habit to develop is that of taking an 'establishing shot' of where you are, and what is going on, so that the audience has a 'context' in which to place you, and what they are about to see. It is about impression management and perception engineering. Simply putting a pretty spokesperson in a lab coat, and glasses, and placing them in what looks like some sort of high tech lab, will grant them a 'transferred authority' which they can then transfer to whatever product or service they are 'pushing'. Or simply 'establish' their character. Their status. Their authority. Their job. Their socio-economic background. And also the overall 'tone' of your presentation. Your Vlog. Your short film. Your feature film.

Each new scene should have e sort of 'establishing shot' that 'establishes' where you are, and the context. This provides a huge amount of information that might otherwise be lacking, and lead to a lot of distracting questions, preventing the audience from 'entering into' the action, and empathising with the characters. Let them know where they are. What is happening. Who is what. When the action is happening, especially if it is a period piece or science fiction. The audience can quickly gain a lot of information from the characters clothing, the furniture, their hairstyle, who they are with, and where they are. This provides context and often 'back-story' and unobtrusive 'exposition'. To 'explain' where we are, what is happening, why we should care about it, and to 'seed' expectations about what might, or is likely to, happen in this scene. And often also what has happened BEFORE this scene. We get a quick 'background'. 'Back-story'. Clues as to the genre. The quicker you can provide this information, the quicker the audience can 'settle in' for the ride. We capture their attention, and interest, and draw them in. They have the clues so they won't be left wondering 'was that MEANT to be funny or tragic?' Letting people know what is 'expected' of THEM is important, especially for public viewings. If people are not sure, they may not laugh, for fear of looking foolish, or even cruel. And your comedy might bomb. Or they may laugh at something intended to be dramatic, and ruin the intended impact.

Of course you might want to hold off on 'revealing' this context to produce a sense of mystery, excitement, wonder, even confusion, in a ZEN fashion, to really capture the audience's attention, and break them out of their patterned expectations. To shock them out of their internal dialogs and memories and projected thoughts, into 'being here, now'. And watching YOUR film. As it is. Rather than how they expected it to be. Without prejudice. Without premeditation. The shock leaves their mind open for a moment. Stops their internal dialog. Stops the internal films that were playing in their heads. Connects them with the REAL time experience. And with the REEL experience you have prepared for them.

You can fake your own establishing shot. Film in some location that would 'establish' you as a particular sort of person, at a particular place. Then shoot the footage somewhere else. Like Hollywood studios do. Establishing first that the action is taking place in some jungle. Then shooting most of the footage on a sound stage. But because they have ESTABLISHED from the outset that 'we are in a humid tropical jungle', we simply ASSUME that the entire film was filmed 'on location'. You can really play with people's perceptions. Construct very misleading impressions. Construct a completely false reality.

Green screens are even used by most television news shows, to pretend their host or an interviewer is 'on location' somewhere. Even in a war zone. When they are in fact in a sound studio in Washington, or Hollywood, or New York. The 'authority' as a source is thus constructed by pretending they are 'at the source of the information' they are presenting. When really they know nothing about anything, and are merely really a tele-prompter. Like a Priest pretending to be 'speaking for some God', and thus WITH that gods authority. Transferred authority they would otherwise not have. And without which people would simply laugh at them. Ignore them. Or at least be very sceptical of what they are saying. The 'dramaturgy' of their presentation is key to gaining transferred authority. The 'establishing shot'. The props. The professional role playing of actors around them, reacting TO them in the way the audience is INTENDED to respond. To provide the ‘cues’ for the audience. So that the empty headed presenter becomes ‘the respected journalist and world authority on X’. A status which guarantees the audiences rapt attention. Even when they are just fools reading fake news reports from a tele-prompter, with no more understanding of ‘the issues’ than the underwear models selling THEIR product. It is all about being able to ‘SELL’ the idea that they ARE intelligent, informed, critical, and ‘on YOUR side’. Bull-dog reporters willing to sacrifice everything to find ‘the truth’ and ‘blow the whistle’ on corruption. To ‘speak truth to power’. When they are just puppets mouthing empty words carefully scripted for them. Their every move ‘coached’ and ‘choreographed’, from how they smile, to how they respond to particular guests, to how they speak, and every minute, subtle piece of ‘body language’ they emit and even emote. They are paid to help create an impression. They are trained and groomed to create that impression. They are chosen because they are ‘impressive’ and ‘convincing’ in their roles. Like Tom Cruise is as an action hero. Or the latest Cult of Judah puppet head of state of YOUR nation is as a ‘strong leader’ and ‘representative of the people’, and of YOUR interests.

Fully ‘controlled’ puppets, so-called ‘controlled opposition’ are given the perfect scripts and ‘back-stories’ to be convincing in that role. They are given ‘secrets’ to expose and reveal, to give them that status as a ‘whistle-blower’ and ‘hard hitting investigative journalist’ which can then be transferred to every piece of fake news and utter rubbish the teleprompter has them utter.

Tracking points of view by editing multiple shots into one seamless sequence

Your sequence should logically follow the action. Think of a baseball game. You establish the context with wide shots of the baseball field, and maybe a fly-over of the audience. Then we do a dolly shot following the batter as they walk out onto the field. Now EVERY time we would ‘enter into’ the point of view of someone, or something, that we are attending to, and thinking AS, and becoming, and identifying with, we can adopt that point of view for the appropriate moment of interest. See things FROM that point of view. The batter at the mound looking down to the pitcher. Seen from the pitchers perspective. Then from the batter’s perspective. Back and forward. There is a logical time to ‘enter into’ each, and to ‘observe from the outside’ each. And things to focus on. If you are not lazy. To really ‘milk’ the scene and action for all it is worth. THAT is what made Hollywood feature films such compelling viewing. So exciting. Long before today’s special effects. Movies made in this way were always ‘carnival rides’ long before George Lucas. Because the director and cinematographer worked to MAKE their films a ‘ride’. Enter-tain-ment. Enter-into-it. Experience something, from points of view and perspectives we normally can’t. Because we are stuck in our selves. Great cinematography and direction brings us OUT of ourselves. Lets us become OTHERS. It TRANSPORTS us INTO OTHER points of view. Like a Shaman facilitating ‘shape-changing’. Camerawork can let us ‘fly like an eagle’, literally. And BE THERE NOW, IN the action. To be moved about and shaken up and enthralled, without any need for 3-D or moving and vibrating chairs. Because we can enter into things in our IMAGINATION. As long as the director and camera team SUGGEST what we are supposed to experience, at any given moment in a scene.

Watch ‘Blade Runner’. Or any great piece of cinematography. Note how many different shots make up a scene, and then a sequence. Think about what the camera operator is doing. What the Director is doing. They are not just random angles and distances. There is a logic at work.

If someone is speaking, usually we want to see WHO it is, unless we intend to build some mystery and generate curiosity and tension. We are in-terested in them. We ‘enter into them’. So we logically next will be allowed to see things FROM your perspective as YOU attend to the REACTIONS of others. There is a logical back and forth. And a time for a wide shot showing both interlocutors. And an ‘establishing shot’ that is even wider, to explain the context, and provide props to the story. And close-ups on details that REVEAL something. A ‘reveal’ can move into a wide shot, but it can also be a close-up of some detail that SPEAKS VOLUMES about the context, the situation, the characters. That places them in a context. That describes key facts about them.

Any time someone says something you can film them speaking. Then film the reaction of their interlocutor. Then the reaction of the speaker to that reaction. Then film them together, talking and listening, showing the expressions of both the speaker, and their listener’s reactions, and the speakers reactions to them.

When a noise catches the actors attention, film them reacting to that noise, and turning towards it, to see what has produced it. Then cut to a shot of whatever it is they see, from the actor’s perspective / point of view. Then cut to a shot of their reaction to what they are looking at, from the perspective / position / point of view of what they are looking at.

If there are several actors, they will all have their own reactions. As they turn towards the source of the disturbance, then back towards each other. Each time we want to ENTER INTO their experience. So we cut between shots from each participant’s point of view, and to shots SHOWING each participants reactions. To both see what they are looking at, and to see them looking AT it. In a series of edits which flow seamlessly, and logically.

And provide wide shots showing the context of these actions, and things the participants probably won’t have noticed yet, due to them being fixated / focussed on something else. Some wider context. Some threat emerging from outside their conscious awareness. About to ruin their fun. Or ‘come to their rescue’.

There is an intelligence at work, to present a scene, a sequence of edited shots, in the most logical way. So that it ‘flows’. And we ‘enter into’ the most appropriate point of view, and experience what is happening, from the logical perspective / position / point of view, at each moment. We see someone 'look' in a direction, then see what they see, then see other reactions to their reaction, and what has attracted their attention.

Often you will be the writer-director-camera operator, but it will still pay to 'storyboard' each shot in a sequence. To force yourself to think it through, and visualise it in your head. Showing each shot in the sequence, and making it clear whose perspective or what location / perspective it is FROM, and where the cameras would need to be located to film it. To hold a private screening of it in your head. So that it is clear in your head. Other times storyboarding is necessary to share what is in your head with others, and help them see it to. So that everyone understands what is key about each shot. And be as motivated during the 10th 'take' of the 60th 'set-up' as during the first take of the first set-up.

The difference between a lazy direction and camera work, with no real storyboard, and the sort of feature film and high quality television that wins awards, is staggering. Quality does not just happen. It is carefully thought out. Storyboarded. Filmed over and over. Until they 'get it right'. And then we have a film that becomes a 'classic'. Timeless. To be enjoyed by potentially billions of people. For potentially hundreds of years.

'Hollywood' feature film (and television) camera moves

There is no excuse for boring, lame, camera work. Learn the 'moves'. Then practise them until they become muscle memory. With whatever camera you will be using. So that you don't have to think much about 'the moves' when the time comes. And you can focus on being creative. And spontaneous. And getting the most interesting shots, under the conditions, and with the gear, and time, and light, and if you are lucky, help, available at the time.

Big budget movies use lots of specialised equipment to get those 'feature film' shots that bring a scene to life, and add that 'Hollywood' magic. That turn 'real' life, into 'reel' life. Taking the most everyday of scenes, that the lazy budget film maker makes look as boring and unworthy of our interest as the typical math teacher in a public high school, but which, thanks to a lot of creative work, and effort, and investment of time, along with specialised training and equipment, and turning them into fascinating spectacles that become compulsive viewing. Scenes we want to watch over and over again. Scenes that 'flow' and 'breathe', and often take our breath away. Even when the subject matter is not that exciting to begin with. But when it is, it is made all the more exciting for being presented in the way it is.

These are the same 'camera moves' we can emulate with 'virtual cameras' in Adobe After Effects. Even with flat, still, images. Or with our text animations. Bringing them to life. Thrilling and engaging viewers. Taking them for a 'ride'. Offering them a real 'experience' they can lose themselves in. Become one with. Enter into. Identify with. Sympathise with. Feel.

Some moves require specialised equipment to perform professionally. Some moves require multiple operators working as a team, in unison, as one. For example 'Pulling focus' while 'pushing in' or 'pulling out' is easier to achieve if you have one person operating the zoom, while another handles the 'push in' / 'pull out'. Or a crane operator moving a camera through the air, adjusting elevation, and position, while a camera operator 'pans' and 'tilts', and 'zooms'. Or a 'dolly' operator moving a dolly along a track, as the camera operator concentrates on framing and articulating the shot. Or an ATV or car driver following a moving subject, often at a short distance, and ensuring the camera operator is always safely, in the correct position relative to the moving subject, so they can capture footage from different angles, without risking injury.

You can emulate many of the same 'Hollywood' style moves using a Glide Cam, or Handicam, or similar, consumer level, 'Steadicam'.

Steadicams, and their consumer level equivalents, the gimbal and the glidecam

With hand-held shots, we articulate our wrist, elbow, and shoulder, along with our eyes and inner ear 'internal gyroscope' to 'balance' the camera in our hands, and maintain a steady, stable, position along the 3 axis of height, and vertical tilt, and horizontal angle. We 'steady' the camera using our muscles and motor coordination, using feedback from our nervous system and eyes.

Garret Brown modelled this cybernetic feedback system. The result was his revolutionary innovation which he called the '**Steadicam**'.

With handheld camera shoots it takes a lot of concentration and practise to maintain a steady altitude, angle, and tilt even while standing still. To do this while moving is a definite challenge.

Steadicam operators have to put t in a lot of practise to master the art of the Steadicam. Those who do become much sought after in the film industry.

Garrett Brown is credited with the invention and development of the 'Steadicam' in 1974

The gimbal

Consumer level gimbals are one evolution of Garret Brown's innovation of a 3 axis 'floating' harness, which stabilises the camera in 3 dimensions.

This became known as the '**Steadicam'**. And thus a new camera operator profession evolved. The 'Steadicam operator'. It takes practise to develop the skills required to get the best results with this device. The physical co-ordination and balance and 'sure footing'. The 'moves'. The 'shots'. The series of moves that become the alchemical ingredient in 'big screen' film magic.

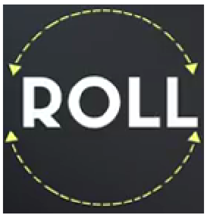
The experience and muscle memory that makes the device an extension of the operators own body. So that they don't need to think much. They can respond. And like the rifleman who 'looks and points' and hits their mark, the camera operator 'shoots' the perfect frame for each shot. And records the perfect sequence. As second nature. Like a tennis players serve, a golf-players swing, or a soccer players 'strike', experience allows the actions to be carried out to perfection, automatically. And needless to say the 'great' Steadicam operators are always in demand, like any other 'star performer'.

A gimbal uses 3 motors and a gyroscope to achieve a more fluid and smooth, and 'steady', shoot. However the result can appear robotic. They can often be programmed and/or controlled remotely via special apps that run on smart phones.

Before you can start using a gimbal you will need to calibrate the gimbal in up to 6 directions.

Then you need to balance the camera you are using. Be sure to have all the accessories you plan to use for the shoot attached, or you will have to re-balance it later. Consider what accessories you will be using for the shoot, and be sure to have them attached. This means zoom lens. Any filters. Any microphone. Even the lens cap and memory card add weight, and can throw the gimbal off balance, if you add them later. So be sure to set the camera up exactly as you will be using it during the shoot. WITHOUT a lens cap, but WITH all those other accessories. And with the focal length set how you intend shooting.

Then remove the baseplate from the gimbal, and ensure a correct fit with your camera. Attach it to the camera. Then fix the baseplate to the gimbal.



Gimbal makers call the 'nodding yes up and down' movement 'Pitch', while cinematographers call it 'Tilt'. Gimbal makers call the nodding 'no' side to side 'Yaw', while cinematographers call it 'Pan'. Rotation around the center of the lens is called 'Roll'. You have to balance your camera in each of these 3 'axis'. So that it doesn't move, when your remove your hands, and finally turn the gimbal on. Then any movement will be due to the operation of its motors. Based on feedback from the internal gyroscope. To automatically correct for any changes in pitch, yaw, or roll. Emulating how our internal ear provides feedback to our nervous system, and our muscles push and pull to adjust the level and position of our hands, arms, and shoulders, to hold a hand-held camera steady. When you turn the gimbal on, the gyroscope immediately senses any change in pitch, yaw, and roll, and activates the motors to correct for these changes. So you can now move the gimbal around, letting the gimbal actively compensate for your movements, and hold the camera steady.

Active gimbals have several 'modes' of operation which the user has to understand, and set, in order to avoid problems, and get the best performance out of their gimbal.

The biggest problem with gimbals is that you have INDIRECT control of the movements of the camera through them. Thus they suffer from 'latency'. The 'time-lag' between you moving your hand /wrist / arm / shoulder, and the camera 'following' your action. This is because the camera is 'de-coupled' from your hand, by the gimbal. There is no DIRECT contact between your hand and fingers, and the camera. So depending on the mode you select, the gimbal might begin a move long after you start it, and follow it at a much slower rate than you performed it. Which makes it inappropriate for attempting to shoot live, spontaneous, unpredictable, unscripted live action scenes. Even simple wedding shoots can be a challenge. Shooting sports and following the action won't be a real option. It is virtually impossible to keep the camera pointed at, and focused on, for example, the face of your subject, in such circumstances, under such conditions, with a gimbal.

You don't have this problem with a glidecam, because the camera is directed mounted to the post which YOU rotate /twist, and tilt and raise and lower with the fingers of your free hand, meaning you have DIRECT control of all the moves, which happen as fast as YOU make them.

'All-Lock mode' means that no matter what you do, the camera will remain facing its original start position, and will neutralise any moves YOU make. So if you roll, yaw, or pitch, pan, tilt, or rotate your hand, the camera will NOT follow YOUR actions, but rather remain 'steady' in the initial position it was in before you moved your hand.

Often you can use a **joystick** or **remote**, or a **mobile phone app**, to pan left and right, tilt up and down, and even roll.

'Yaw Follow mode' means if you pan, the camera will follow, with the gyroscope and motors smoothing out your moves.

In '**Yaw-Pitch Follow mode**' the gimbal will follow your tilt/pitch and yaw/pan moves, but with the gyroscope and motors smoothing out your moves. So your actions, and the moves of the camera, are decoupled and suffer some 'latency' or 'time lag'.

In **'Roll follow mode'** the gimbal will follow you when you roll gimbal clockwise or counter-clockwise, but with the gyroscope and motors smoothing out your moves. So your actions, and the moves of the camera, are decoupled and suffer some 'latency' or 'time lag'.

Some gimbals have an '**Inception mode'** that 'rolls' the camera along its length, with the center of the lens as its reference axis.

All this is important to remember when considering what sort of consumer level 'Steadicam' to buy. Gimbals don't just work 'out of the box'. You need to learn how to 'set them up'. To balance them. Remember to balance them exactly as you intend filming with them. With the lens cover off. And with any additional attachments or accessories attached. Even at the focal length / zoom setting you intend using. If they are active mechanical gimbals with motors, you will need to learn how to 'calibrate' the motors. You'll have to make sure you have enough batteries, and that they are all charged. You really need to invest some time and energy into learning how to use an active, motorised, programmable, gimbal. To even get the most basic shots. Let alone to get the best out of them. Even to achieve some simple shots, you will have to go through a 'learning curve'. To learn how to use the 'control panel' and possibly 'remote control' for panning and tilting and rotating.

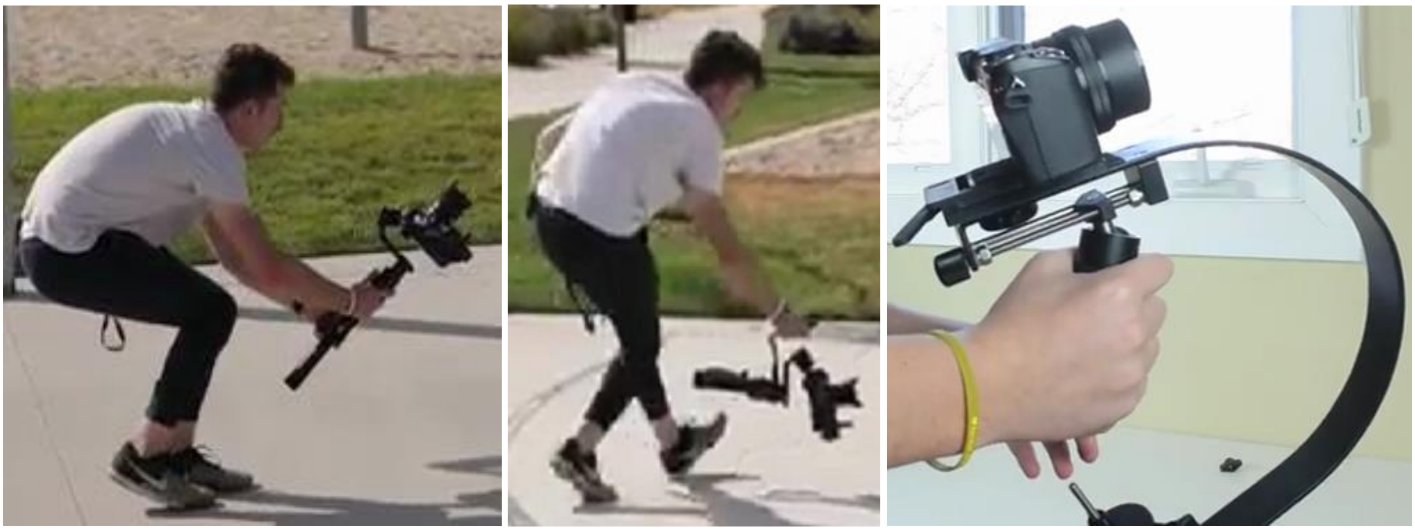
All that electronic genius and convenience requires battery power. So you'll need to plan ahead, to ensure your batteries are fully charged, and you have fully charged, spare, batteries to replace them with. Your gimbal becomes useless if the batteries run flat. You will be back to using all those 'hand-held' techniques described earlier. Rain, or excess humidity can also play havoc with the gimbal electronics, motors, batteries, and computer chips.

You will have to take care when transporting your gimbal to a shoot. It is much more easily damaged than a passive glidecam.

Each time you take your gimbal out for a shoot, you will have to 'set it up' again. Remembering to take the lens cover off. And adjusting the focal length / zoom to the setting you intend using for that shoot, before rebalancing it, if you have made any changes since last using it. Otherwise the weight of the lens cap, or the change in center of gravity of the zoom lens, can easily ruin the balance so important to the correct operation of the gimbal. Then you need to select the correct 'mode' for the shot you intend making. Unlike a Glidecam which, once you've balanced it ONCE, are ready to go.

Active, motorised, gimbal shots can often look 'robotic' and 'mechanical', and aesthetically inferior to the same shots taken with a Glidecam or without any device, simply using the 'hand held' techniques described earlier in this guide. The motors are not as responsive as your fingers and wrists, so reaction times are often slowed down, and you can't even GET the shot you REALLY wanted. Such as for action scenes. So far you can't program the 'speed curves' of the motors, like you can with After Effects simulated cameras, so you are stuck with a 'linear' movement. Unlike hand-held moves which can speed up, slow down, and speed up again. With as much variation in speed as you like. Next best, in terms of 'responsiveness' and 'finger feel' is the Glidecam. The camera is still decoupled from your hands, but will respond immediately to any pressure you apply to it. Without the delays associated with motorised gimbals.

For many shots you will need to ‘lock’ your gimbal, by putting it in 'tilt-lock' mode, so that you can re-couple the camera to your hand/arm, and have more direct control over it, as you automatically get with a hand-held shot, or Glidecam.



A motorised gimbal left, and a passive gimbal right

This motorised gimbal can be programmed to rotate and film while you are driving

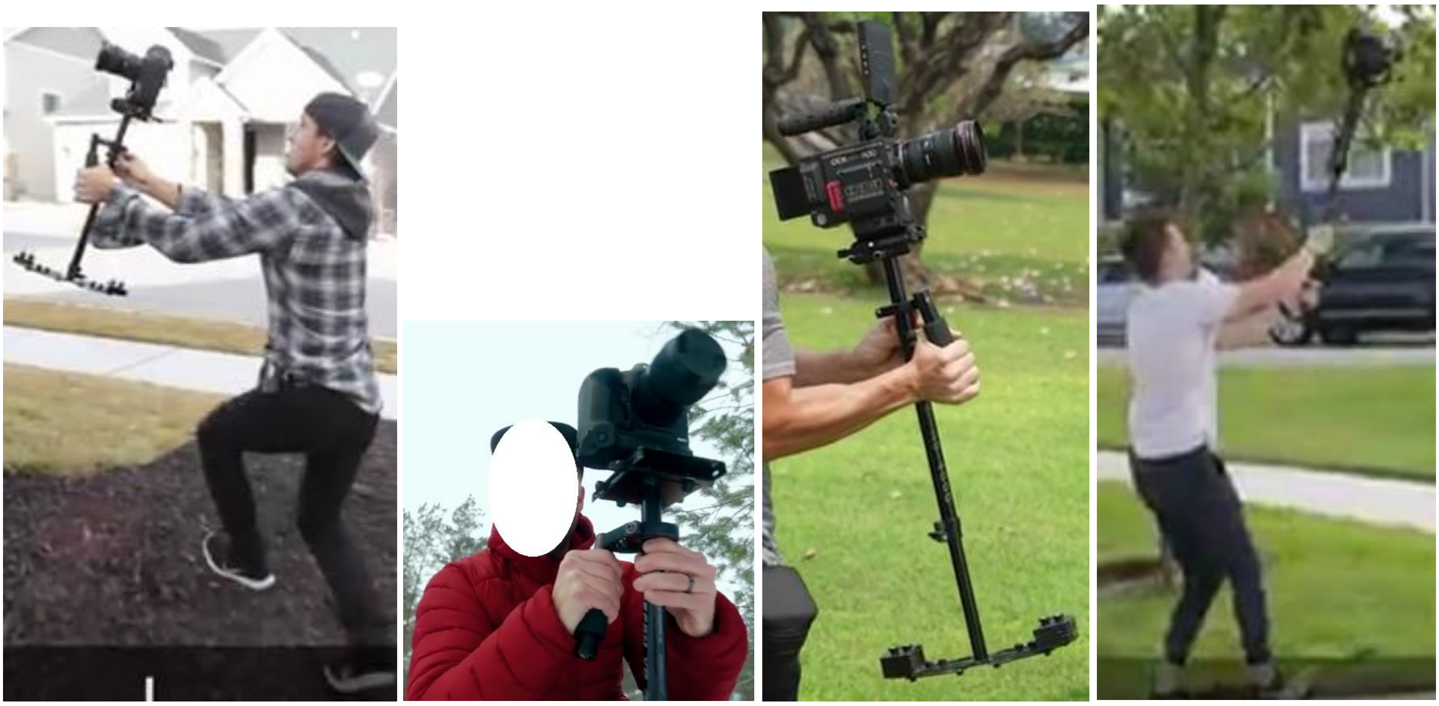
That said, a motorised, programmable, gimbal can become your best friend. A metal camera operator. For you can set it up on a tripod or other stable surface, work out your shot, and program it. Then use it to film yourself. It can take a lot of ‘hit and miss’ trial and error, and careful choreography, to be in the right place at the right time, so you are ‘in frame’ as the camera goes through its programmed moves, zooms, pans, tilts, and rotations. But you have total control, and can redo the shots as many times as you like, from as many different positions, with as many different angles and zooms and perspectives. Lone Wolf film makers won’t need to worry about their ‘social skills’ and having to deal with camera operators. Let alone find them and motivate them. Probably pay them too!

You can program a motorised gimbal than place it in a moving vehicle, or on a moving vehicle, as it crashes in a controlled stunt, without risk of injury. Again you need great storyboarding skills to ‘plan’ and ‘choreograph’ and ‘program’ the gimbal.

9 dot solution C-pan arm

This device looks like a solid, robust, largish, industrial looking articulated table mic stand. Only with a camera on the end. It can be attached to a table or a stand. The weight of the camera is balanced by a counterweight, so changing the position of the articulated arms is effortless. You simply grab, push, and pull on the articulated arms or special handles, for perfect ‘push-in’, ‘pull-out’, ‘pan’, ‘tilt’, and sideways/lateral ‘dolly’ shots. All at the speed that you move your own arms and hands. So you get ultra-smooth, stable, fluid, shots. And absolute, precise, effortless, control.

A Glidecam offers a faster learning curve, and greater control



You hold a Glidecam by an articulated handle, and then manipulate it with a few fingers of your other hand

The balancing of a Glidecam is relatively quick and easy, compared to balancing a gimbal. To attain a horizontal balance, we screw the camera in place, without the lens cap, but with any accessories we intend using for the shoot, and with the lens extended to the focal length we intend shooting with. We then move it forwards and backwards along a track, until the center of gravity of the camera is directly over the Glidecam post. Then we need to balance the weight vertically. Basically the top half of the glidecam should weight the same as the bottom half of the glidecam. We can increase the weight of the lower half by adding more weights, or increasing the distance of the existing weights from the handle., thus increasing the ‘leverage’ of the existing weights. A combination of both actions lets us fine tune the balance. To reduce the weight of the bottom half we do the opposite, shortening the length from handle to weights, or removing weights from the weighted end.

Make a note of the different balance positions, and ‘how many turns of the screw’ it takes to go from one camera set up to another. Such as for different focal lengths. For different zoom lenses. For different set-ups, such as with external mic and without. To save time re-balancing. You’d hope gimbal makers would offer the same sort of option luxury car makers do with their seats, with ‘programmed’ settings for different camera set-ups. For your glidecam you can make a mental note, or a physical note. Over time these settings will become ‘muscle memory’ and you’ll find yourself making the adjustments automatically, without having to think, let alone ‘try and see’. You’ll also get good at judging what adding or removing weight from your set-up is going to do to the current balance, and what changes you’ll need to make to compensate for them.

One indicator you can use to test for likely imbalance is to hold the ‘loaded’ glidecam (glidecam with camera and any accessories you will be using) b by the handle, and with your free hand grab the weighted end and lift it so the glidecam is horizontal, level with the ground. Then release the weighted end so the glidecam swings back and forth like a pendulum. It should stop moving in about 2 seconds. Extend the length, or add weights if it takes less than 2 seconds. Shorten the length or remove weights, if it is taking longer than 2 seconds. Fine tune in this way until you reach the magical ‘2 second’ target.

Another test/indicator is that if you place the glidecam weighted end on a level surface, then hold the handle and pull the glidecam directly up, it should remain perpendicular to the ground, if you’ve balanced it correctly. If the camera leans or falls in one direction, adjust the camera in the opposite direction on the baseplate. So if it falls right, move the camera left on the glidecam baseplate. This will move the center of gravity of the camera left, and over the vertical center of the glidecam. Adjust it until it doesn’t threaten to fall to either side.

With it set up correctly, and balanced, you should be able to move your arm left and right, and have the glidecam follow you, while remaining vertically upright, with the camera remaining level.

Hold the glidecam in your load-bearing arm (usually left arm for right handed people), then hold the glidecam post. Just beneath the bearing, lightly in the fingers of your free hand. Use these fingers to rotate the post/shaft of the glidecam to 'pan' the camera. Push the post forwards from near the weighted end, to tilt the camera upwards, and pull the post backwards near the weighted end, to tilt the camera downwards.

Unlike the gimbal, the glidecam does exactly what you want it to do, in real time, as you do it. You have total control. Without any latency. There is no time-lag. You get an immediate transfer of force from your hand to the camera, via the glidecam post. This makes it a better choice for following unpredictable, random, spontaneous, unscripted, live action. You can move with, and follow, and track, sudden movements, keeping your subject in frame, and in focus. You get more natural looking footage without the 'robotic' look of a motorised gimbal.

With patience and practise you can achieve the same level of smoothness and fluidity with a glidecam, which the gimbal delivers, thanks to its gyroscope and motors. We replace the gyroscope with our inner ear and brain. And the motors with our muscles. Practise until the glidecam becomes an extension of your arm. It takes many hours for the brain to 'map' the glidecam moves desired, to the hand and arm movements required to produce them.

Adopting the glidecam rather than the gimbal means we won't need to worry about charging the batteries, and remembering to bring spare, charged, batteries. Or about batteries going flat. Or rain, or damp, or high humidity interfering with the gimbal gyroscope and motor, and other electronics. And being robust and rugged, you won't need to take the same precautions when transporting the glidecam to your shoot. And second hand glidecams won't have any 'nasty' surprises, as any damage or faults will be immediately obvious, whereas glidecam electronics and motors can suffer wear and tear, and glitches that are not at first evident. This makes buying a second hand glidecam a simple decision, compared to a second hand gimbal whose batteries may not hold the full charge, whose chip might be defective, whose motor gears may be worn, and thus whose operation may be compromised. Also glidecams can often handle heavier camera and accessory loads than gimbals, so you won't run the risk of not being able to use your camera and accessories of choice, due to a gimbal that can't balance such relatively heavy loads. And once you've set your glidecam up for any particular camera and accessories, it is set. You can remove and replace your camera without the need for re-balancing the glidecam. Whereas each time you remove your camera from a gimbal, and replace it, you have to fiddle around re-balancing it.

That said, the gyroscope and motors of a gimbal come in handy in windy weather, as they automatically correct for the wind. Whereas doing this manual can be a tricky, frustrating job that distracts you from the more creative aspects of your shoot. And gimbals are preferred by most people for low shots, where you can hold them upside down, level with the ground, at about ankle height, and follow a moving subject with ease.

All in all, experienced glidecam users manage to get all the shots they love, without ever regretting not having a gimbal available. They never find a NEED to use a gimbal, instead of their glidecam.

So consider making your first Steadicam purchase a glidecam. It will be cheaper. You will enjoy all the benefits listed above. And if you then decide you just have to have an active, motorised, gimbal, you will be able to bring the glidecam for 'backup', and for any shots that NEED the direct, responsive, immediacy that only a glidecam can offer.

The handle is articulated to allow the camera and Glidecam to remain in a stable position, independent of the position of the handle. So when you move up and down, as a result of walking, for example, the handle moves, but the camera does not.

The camera and gimbal can be rotated left and right, in the horizontal plane, by twisting the Glidecam post with the fingers of the free hand.

The camera can be tilted by pushing and pulling the Glidecam post forwards and backwards, with the free hand.

The camera can be raised and lowered vertically by lifting the Glidecam by the handle.

By placing the free hand on the weights, you can also raise the hand gripping the handle above your head.

You can turn the Glidecam upside down to shoot from close to the ground.

If your camera or gimbal allow you to program different moves, and zooms, then learn how to program them. And practise syncing up manual moves with these programmed moves. So that you have less to worry about during a shot. Allowing the camera to 'pull focus' or 'auto-focus', and the gimbal to automatically pan or tilt, while you focus on a smooth 'push in' or 'pull out', or 'pedestal'. To focus on keeping pace with the subject, while avoiding crashing your skateboard, or walking into things. To avoid losing balance as you carefully climb up something to gain elevation, or slide down something to lose elevation. As you crouch low and then slowly standing up, then extending your camera arm as high as you can above your head, without dropping the camera, or changing its angle. While beginning to climb up that rock or ladder or fence you are using as your 'crane'.

Use software that allows OTHERS to control different operations of the Gimbal / camera, such as tilt and pan, while YOU focus on adjusting the height of the camera/gimbal, crouching down low, then extending your arms high above your head. Then to get a really tall shot, stand on something high, then crouch down, and hold the camera as low as you can, then as you stand up straight, the camera will rise, and you can continue to rise up above the subject by extending your arms up above your head, so you go from really low, to really high, without a Jib or crane. Or while you push your camera through something, to carefully leave it right near the exit, while you run around to continue the shot, at the same elevation. Now you can edit out the bit where you stopped and started, and give the impression of a 'fly-through'. Or you might just be 'pushing-in' to a fence that your protagonist is looking through.

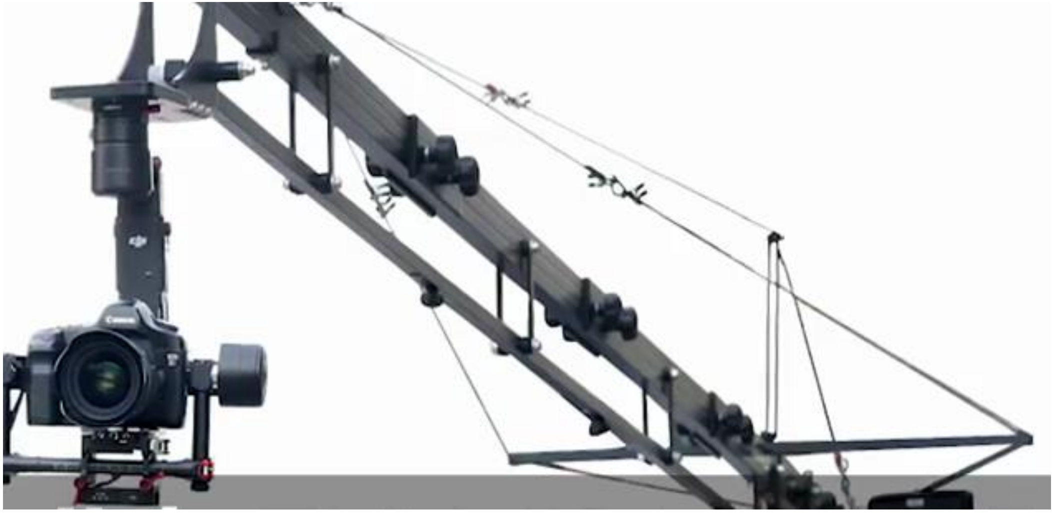
If you include enough demonisation of Hitler, National Socialism, Germans, or Arabs, and reinforce the idea that 'terrorists' are NOT your own government, but some 'foreign' enemy, or 'product place' a lot of 'Holocaust', 'man-made global climate crisis tipping point', or 'virus pandemic plague closely resembling corona virus'' propaganda, you might find all manner of resources become available to you, such as the 'goodies' below.

Jibs are big cranes that allow sweeping shots from above. You can emulate a jib by attaching a 'mono-pod' to your gimbal/stabiliser or attaching it to a pole or other extension. Consider using a wider lens. Be sure to engage the 'tilt-lock' mode if using an active, motorised gimbal.

Experiment with your shots. Try starting low and sweeping high. Try starting the shot behind some foreground obstacle that blocks the view at first, then move the camera above or to the side of it, for the 'reveal'. Or start with a shot of some high object, such as the roof of a stadium/arena/train station, then sweep down to reveal the stage and band or crowded platform. Start from behind a subject, such as a soldier's back, their banner waving over their shoulder, then raise the camera above their shoulder, or stop, and allow the solider to continue on, and in doing so move out into the frame, revealing the battle scene that is raging in front and around them. With maybe mounted knights rushing between them, and the camera, to really add some action, and reveal the battle scene.

Or start with a shot of a raven picking at the eyes of a fresh corpse, startled, flying up. Then take that raven's point of view, and do a fly-over of the battlefield strewn with corpses, and women and children picking over the dead soldiers' bodies for valuables.

A jib crane can be operated by a jib crane operator, or using controls which the camera operator can manipulate with their hands and/or feet. Alternatively camera and/or crane can be operated remotely, as shown below



Not to mention you will be up for all sorts of prestigious awards, gain critical acclaim in all the Cult of Judah controlled (basically all) mass media platforms, and be ensured a lot of free publicity, and access to all the best distribution and marketing channels!

Changing from camera stand or gimbal to hand-held, while shooting a sequence

As a basic rule of thumb, unless you have an ARTISTIC reason to change from camera stand or gimbal to hand-held, DURING a sequence, don't do it. The footage taken will look different, and distract the viewer, jarring them out of the 'trance' you have induced them into with your plot, and cinematography.

Remember CHANGE is obvious. We are KEYED to NOTICE change. Our senses are sensitive to change. Happiness is the sense that you are MORE fortunate than you were before, or more fortunate, when compared to, or with, someone else. Thus people more fortunate than ourselves make us feel unhappy, and we can blame them for this, and feel malice towards them. Thus ‘we hate our betters’. Those more fortunate. Big Brother, in 1984, fakes old news reports so it can then announce, in a new piece of fake news, that ‘The Chocolate Ration has been increased’. This increase being a source of happiness for the sheeple!

Avoid the temptation to save time, and ‘rush a job’, especially near the end, with light fading, and crew and actors getting tired and longing for home, by using a different shot than the one you’d planned for a sequence. You can easily live to regret this decision, in post-production, where you find that the ‘different’ shots simply do not ‘work’ together. And you will have to either cut that shot from the sequence, or re-shoot it.

Audio and Sound Design

Overdubs, ambient background, and Foley

Budget film makers often overlook audio. They take it for granted that viewers will put up with bad audio. Audio where you have to turn the volume right up just to try to hear what the actors are saying. Where you have to rewind and replay a few times to try to make out what was just said. I’ve had to do this recently with big budget films. With YouTube videos it is, frustratingly, almost ‘par for the course’.

We tend to take the audio for granted. But how is it that we can hear every word so clearly? Even in a crowded restaurant scene where our protagonists are ‘whispering’?

Well that is because the audio is usually overdubbed in a sound studio. Mixed and blended from multi-track recordings. In fact mutli-track recording probably started in the film industry. And today it is film studios that recording studios hire out their largest and most expensive studios to. Where most of their big budget work comes from.

There is nothing stopping you from putting a mic into a wardrobe full of clothing, and having your voice actors sit or stand with their face among the clothes, to improvise a ‘vocal recording booth’. That would be for the overdubbed voices.

That is just the start. During the shoot you will want to record ‘ambient’ ‘background’ audio, from the restaurant where the actors are talking, in the scene. But there is no need to limit yourself to this. You can then add ‘appropriate’ sound effects to match the scene. To give the ‘feel’ you are going for.

Then there is the ‘mood’ music which, like slow motion, adds the glamour and emotion often required to ‘ramp up’ the cinematographic mood. To amplify it. To ‘inform’ the viewer ‘how they are expected to interpret’ the scene. Thus what to feel. When.

Even ‘laugh tracks’ known as ‘canned laughter’ might be added to a scene intended to be funny, just so the audience ‘knows’ it was intended as such. Or violins to ensure the audience ‘knows’ that ‘this is tragic’. People like to be ‘cued’. No-one wants to be the ‘odd one out’ laughing out loud, because the rest did not ‘get’ the joke.

The same goes for matching music to ‘bad guys’ and ‘good guys’, as they did in those great Westerns. Not only did you have the ‘black hat’ and ‘white hat’, you have the appropriate ‘evil’ and ‘good guy’ music to ‘cue’ you. So you knew who the ‘bad’ guy was and who the ‘good’. Like they do in all today’s fake news. The Muslims and Nazi are the bad guys. They wear Hijabs and BOSS designs. They speak a certain way. Don’t worry, you’ll never be embarrassed at ‘not knowing who the bad guys are’. You’ve been conditioned from birth by Hollywood, and the mass media, and your school text books, to know ‘we were the good guys in World War Two’ even though WE firebombed Lubeck, Dresden, Hamburg, Berlin, Tokyo, Hiroshima, and Nagasaki. Even though WE made the world safe for Dictatorship, from the Soviet Union to Chile. And don’t worry, the Israeli’s run the ‘Middle East information center’ in Washington, and they can certainly be counted on to present a fair, balanced, neutral account of ‘the facts’. Right?

Then there is the all-important ‘**Foley**’. Audio of footsteps. Of doors being opened and closed. Of background ‘office’ noise or ‘street traffic’ noise, or ‘restaurant kitchen noise’. Even ‘leaves rustling’ or ‘branches stirring in the wind’.

When you have all these on different tracks, you can ‘mix’ them so that each is perfectly, clearly, audible to the audience. Thanks to the magic of ‘compression’ a whisper can still SOUND like a whisper, but be as LOUD as a shout. That sounds odd, but it is possible because the qualities that make something sound ‘whispered’ have much more to do with pitch and inflection and tone than with actual dB / loudness.

You can use EQ to ‘clean up’ audio and emphasise different parts of it. Such as the voice of the protagonist. Or a sudden, violent, explosion or crash.

You can use ‘reverb’ to make it sound like your actors are in a cavernous room, a cathedral, a small room, or even buried underground. Reverb also adds information about ‘depth’ or ‘distance from the viewer’. You can ‘position’ your actors on the ‘sound stage’, relative to other sound sources, using reverb, and EQ.

See my ‘**Sound Foundations 20-20 Audio Engineering Reference Guide’** and ‘**Optimal Reaper’** publications to learn all you will ever need to know about recording and mixing music, sound tracks, and film audio.

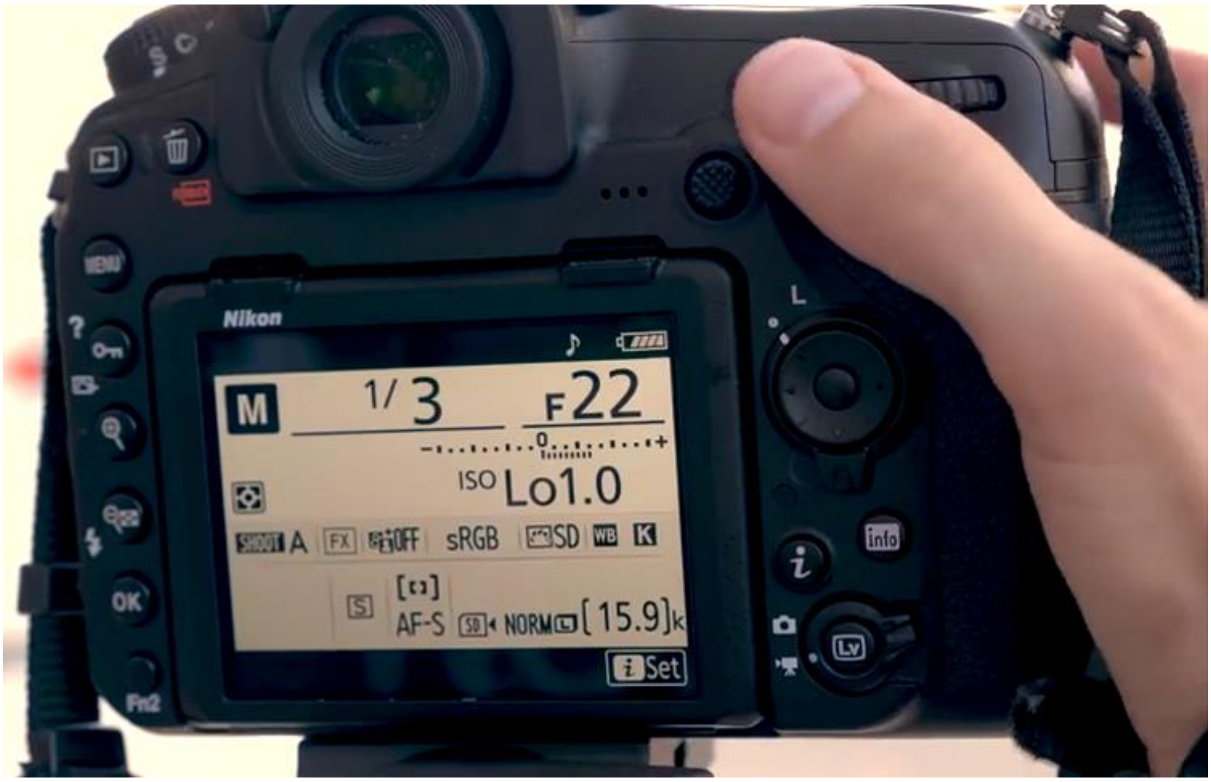
You can use ‘free’ software like ‘Audacity’ to take your video to the next level, by bringing your audio up to scratch. Check out Thomann.de for a huge range of extremely affordable microphones. Yes, Hans Thomann has personally blacklisted me from ever using Thomann.de again. Because I attempted to give him valuable feedback about communication problems in his ‘family business’? You’d better ask HIM what that was all about. Being a philosopher makes you ‘persona non grata’ almost everywhere. Ex-communicado! Yes so not only the Pope, but Hans Thomann has ex-communicated me! Expect terrible service and you won’t be disappointed. But I still shop there, using friends as proxies. Because they usually have the best range and prices, for shoppers in Estonia at least, when it comes to their ‘in-house’ music and recording products.

Video shoot basics

If you have a recent model mobile phone, you have all the gear you need to produce high quality VIDEO footage, using the built-in camera. And either a ‘Glide Cam’. Or by practicing the methods described in this guide for stabilizing your mobile phone using just your own body.

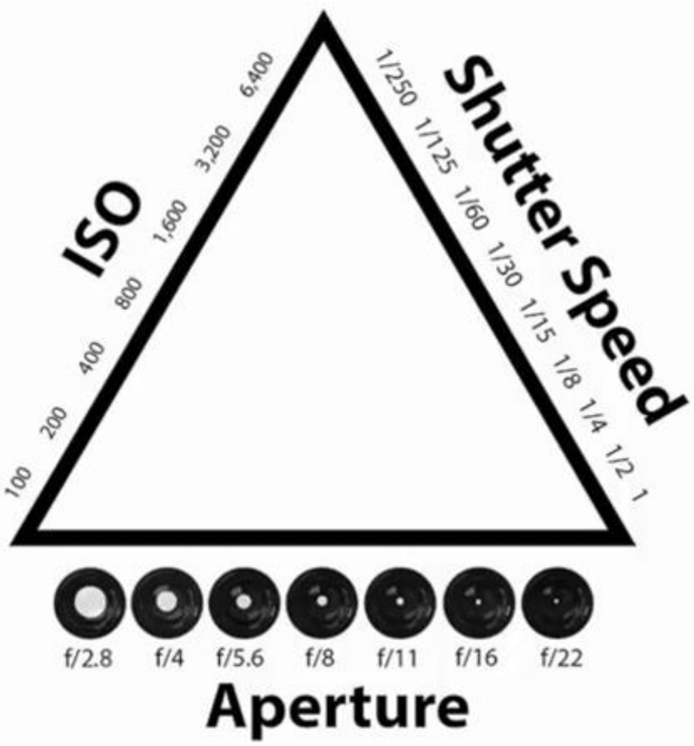
As a general rule keep the camera lens around eye level of subject unless you are going for a particular artistic effect.

If you do opt for a video camera, you will need to learn how to ‘set-up’ your camera for the specific conditions you are recording under. You will need to find the optimal balance of **ISO**, **shutter speed**, and **aperture size**.

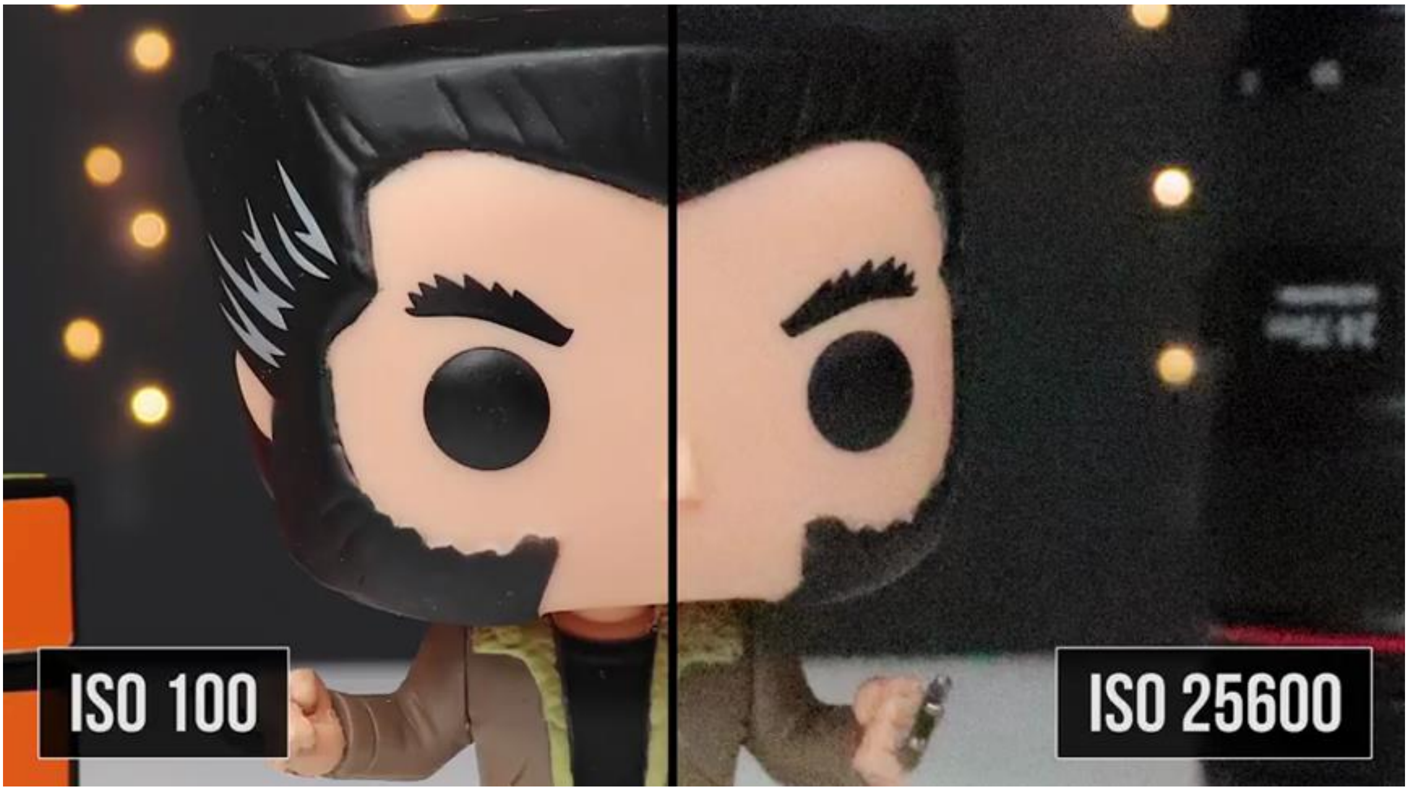


In the above example the SHUTTER SPEED is set to 1/3, the APERTURE SIZE is set to F22, and the ISO is set to 1.0

Have a general ‘checklist’ you go through before setting out for each shoot. And to go through when you arrive. Add any ‘shot specific’ notes while setting up and preparing the shoot. Work out what the best settings for this shot are going to be. Use your phone ‘notes’ or use ‘stick-it’ notes. Mentally remind yourself to go through this ‘check-list’ before and during shooting, so you don’t overlook anything.



ISO values



At night, with all the lights turned off in your room, notice how ‘grainy’ everything looks. Just as it looks in the image above, with the ISO 25600 setting.

Greed is not good. Balance and moderation in all things is the ideal. The image above gives an idea of the artefacts introduced when you use a very high ISO, in poor light, rather than adding artificial light, and using a very low ISO. If you attempt to get the same detail without using artificial light, simply by bumping up your ISO, you end up with a grainy, soft, blurry, discolored, image. If you light a subject correctly, and use a very low ISO, you get clearer, more detailed, results, with sharper contrast, and more ‘true to life’ colors.

You can remove some ‘noise’ in post-production, with ‘de-noising’ plug-ins / software, but at a cost of reduced contrast, and images that become ‘soft’ as a result. So the ideal is to capture the contrast and detail you want for your final product, during the recording stage.

Remember that you cannot ‘enhance’ what is not actually there. If you don’t record it, it is not there. If you use too high an ISO, all other things considered, you will lose the data which is ultimately rendered as sharp, high contrast, detail, in your final images. You will be capturing potentially MORE data, but of a lower QUALITY, so it will be oddly colored, grainy, and possibly unusable. Greed is not good in this context as in all other contexts.

We need to take a holistic approach with all things. Changing one thing, for the better, often does harm in ways we didn't expect. So we get an improvement in one thing, but at a cost. Other things are made worse.

Optimalisation is about finding the optimal 'basket' of outcomes. And the 'basket' of inputs / settings that will produce this.

The decision making process has to be holistic. The ideal ISO that would give you the most detail, will often produce artefacts / 'noise', such as grainy texture, and odd coloration, which can make your footage unusable. At very least the costs of that higher ISO setting that 'looked better' at the time, can easily end up higher than the benefits. You will have to lower your ISO, and sacrifice some detail, to keep such artefacts / noise low. At least low enough for de-noising software plug-ins to be able to remove / compensate for, in post-production. Only then can you find the optimal cost-benefit in terms of detail / clarity and noise. The ideal ISO that delivers the best basket of outcomes.

Aim for balance. Avoid ISO's that are too low, or too high. In the first case you end up under-exposing your subject, and losing information that cannot be added later in post-production. Post-production processing can only accentuate and amplify what is there. If you fail to capture the data, it cannot be manipulated later using software. So make sure your ISO is high enough to capture the contrast, detail, and sharpness you are after in that particular shot.

If you shoot using too high an ISO, you introduce 'noise'. A little noise can easily be removed in post-production, via software algorithms / plug-ins. However if you use too high an ISO, and have too much noise, your footage could end up unusable, due to excessive noise / artefacts such as discoloration and grainy images, which, when corrected, remove all contrast from the images, leaving them 'soft'.

In terms of how high an ISO you can use, **a camera with a higher quality sensor and/or processor** will be more forgiving than a low quality sensor and/or processor. You will get **crisper, cleaner, higher contrast, more detailed, more color true images**, all other things being equal.

As a rule of thumb, you are better off getting sharper images, with more noise, than blurry images, with no noise. Your raw footage will be better. And the post-production improvements possible are also greater. What this means is, when in doubt, go with the higher ISO, rather than the lower ISO. But don't get 'greedy'. Moderate your ISO as much as you can, while retaining as much detail as possible.

Auto ISO can become your main enemy with cheaper cameras, video cameras, webcams, and mobile phone cameras

Auto ISO is the reason cheaper webcam and phone camera video appears so 'glary' and 'noisy'. The sensor determines how much light is available, and ramps up the ISO, without consideration for the negative externalities / costs this has for image quality. The priority of the manufacturers seems to be simply to ensure images are captured, rather than to worry about their quality.

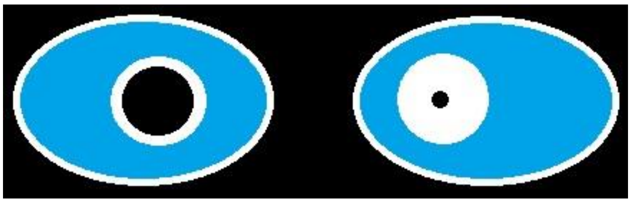
So if your camera has automatic ISO adjustment, you will need to invest in some form of lighting, or limit yourself to shooting in ideal natural light conditions. Be sure to avoid harsh direct sunlight. Pulling blinds down to filter this light can often be enough to make it useable. Place the camera with the window directly behind the camera, so the subject is facing the window, with both sides of their face equally well lit. You can place reflectors to either side, or to 'smooth out' any particular shadows.

You can 'frame' the shot so that artificial light sources and reflectors are 'out of shot' and NOT in the frame, and thus not visible in the video. This is why having multiple cheap lamps placed on chairs and so on can come in handy. You can place lamps on high cupboards or shelves, or improvised 'stands' made out of boxes, or just hang them from nails in walls. An affordable 'ring light' is often all you will need to make a huge marginal benefit to your shoot, at little marginal cost.

Aperture and 'depth of field'

Experiment with aperture settings to get the desired 'depth of field. f10 produces a 'flat' image with an extremely shallow depth of field, the foreground and background blending into one layer, with no separation between foreground and background. Whereas and aperture of f1.7 will give you a deep 'depth of field', with a large degree of 'separation' between foreground and background.

Aperture (f) values are equivalent to the dilation of your pupil. Consider how in low light, your pupil dilates, and becomes LARGER, to allow MORE Light to enter your eyes. This is how your eyes adapt to LOW light. By dilating. By INCREASING their aperture size (f value). So the far left f/2.8 value represents your eye, in LOW light. Then when you walk out into the sun, your pupils SHRINK in size, down to tiny black pin-pricks, to allow LESS light into your eye.



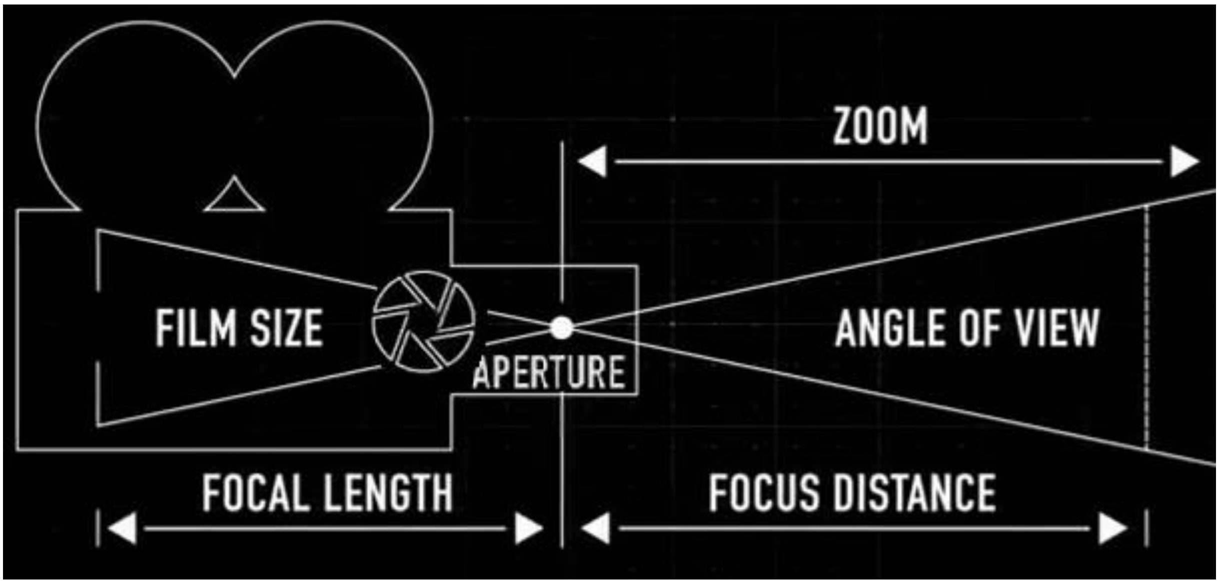
Ideally you'd use as large an aperture as possible. Like a cats pupil at night, wide, collecting all the available ambient light. And as slow a shutter speed as possible, to 'expose' the sensor (the modern equivalent of film) to that available light, for as long as possible. Basically a combination of large aperture and long exposure/slow shutter speed allows the most photons / light to be 'harvested', for as long as possible.

But consider how by expanding the diameter of the pupil, or aperture, you also change the angle of view. The 'focus'.

MHR NEED CLARIFICATION ON THIS, I.E HOW DO EYES FOCUS, AND DOES APERTURE DO THIS IN CAMERAS I.E AM I CONFUSING THINGS HERE? I AM CONFUSED. SO NEED TO INVESTIGATE AND CLARIFY THIS FOR SELF, THEN FOR GUIDE

Rather than adjusting the zoom, change the lens between shots, using 'primes' such as 25, 35, 50, and 85. This way you get a wider aperture up to 1.2 or even 0.95, rather than the 4 or 2.8 possible with zoom lenses.

Buy the widest aperture lens that fits your camera. Some cameras allow you to use quite inexpensive, second-hand lenses. This is something to consider when making your decision about which video camera to buy. For some cameras, there are lots of cheap options for second-hand lenses. For others, you are stuck to buying new, expensive, lenses.



In the above diagram, the mechanical device known as the **SHUTTER** is shown. The **Hexagonal opening formed at the center of the Shutter Blades** is the **APERTURE**. The shutter's position in the camera is represented by a **thick DOT** where all the lines cross over, just behind the camera lens. The Shutter is a mechanical mechanism made up of blades, which are pushed in and pulled out, so that the hexagonal 'hole' resulting grows and shrinks in diameter/radius/circumference/size like the pupil of an eye dilating, growing larger or smaller. The size of the Aperture, then, along with HOW LONG THE SHUTTER is allowed to remain open, exposing the film/sensor to light, will determine, together, how MUCH light the film/sensor is ultimately exposed to. If we get this combination wrong, we can end up with **'under exposed'** or **'over exposed' film**, or digital shots.

The **Focal Length** is the distance between the film / sensor, and the aperture. The **Focus Distance** is the distance between the aperture and the **focus plane**. Anything at this distance, along this plane will be 'in focus'.

The **Zoom** moves the aperture forwards and backwards, thus increasing or decreasing the **Angle Of View**, and means more or less will be 'cut off' or 'included' in the frame/shot.

A camera will usually be set up for a particular **Film Size**, such as '35mm'.

All other things being equal, if you change any one of these variables, all the other variables will be affected, reflexively. Nothing exists in isolation. So any time you change one factor, remember it will impact other factors. Often negatively. So you are often forced to 'trade-off' one benefit for another, to avoid the 'cost'. The true cost is the 'opportunity cost'. That opportunity forgone, and NOT enjoyed, because of the choices you HAVE made. So it is about cost-benefit analysis and setting priorities for each sequence. Or even each shot / frame. And taking the time and effort to 'change camera set-ups' between sequences, or even within a sequence.

Just as you might plan as 'slow motion' sequence, and thus shoot at double the playback 'Frames Per Second' (fps), so when it plays back, it LOOKS ‘slow motion’, you will find yourself having to plan other things ahead too. And have to decide what is MOST important, for each part of each shoot. Which takes planning. And a bit of ‘theory’. And ideally lots of experience. So get out there and start accumulating experience. And refer to this guide to ‘inform’ you ‘experiments’, so they are not just ‘hit and miss’. But rather ‘considered’ and ‘planned’. With certain expectations, BASED upon the theory, that allow you to PREDICT some things.

That said, ALWAYS trust your eyes and ears. The impressions of your senses. Reject the theory if it doesn’t work in your situation. If it LOOKS great, and SOUNDS great, then it IS great. No matter WHAT the theory has to say on the matter, and predicts. Practice ZEN. Take ‘rules’ as mere ‘starting points’ for your OWN observations and experiments. Never be a slave to ANY sort of orthodoxy, dogma, article of faith, ‘authoritative assertion’, or assumption. Especially ones based merely on hearsay. Like ALL religious dogma is. And most of what passes for ‘the official narrative’ of history, from ‘The Holocaust’ to ‘911’, and beyond, to ‘Corona Virus’ and ‘man-made global climate crisis tipping point’.

Shutter speed Vis a Vis fps and aperture

Each of the (minimum) 24 frames you ‘shoot’ is a photograph. A still image. The longer the exposure, the longer the ‘film’ or ‘censor’ is exposed to the light. And the greater the risk that the object/subject will move during this exposure of the censor / film TO the light.

Note that ‘higher’ means faster. For example 1/30 is faster/higher than 1/24, in the context of cameras and filming.

What we are doing is taking SAMPLES. Snap Shots. The more samples we take per second, the more ‘isomorphic’ our recordings will be. At an infinitely fast shutter speed, we would lose no information at all. There would be no ‘gaps’ in the flowing movement of the objects/subjects, when they moved.

In reality we typically sample at a rate of 24 frames per second. If the shutter remains open long enough, and the subjects move fast enough, they will move while the shutter is open. The result will be a ‘blurring’ of the individual image.

If you have a fast shutter speed, but few frames per second, relative to how fast the target / object / subject is moving, then there may be no blur, but the target may appear to ‘jump around’ within the frame, from one position to another, without having ‘covered’ the distance between these positions.

These are both artefacts introduced due to sampling speeds and shutter speeds. In real life our eyes sample at about 24 frames per second. So things OFTEN appear ‘blurry’, when they move fast. We are accustomed to this.

But the ‘jerky’ ‘spasmodic’ ‘jumping around’ of images BETWEEN frames can irritate and distract viewers. It is NOT natural. And something to keep an eye out for when using stabilization software plug-ins.

But it is not just movement of the subject/object/target that can produce headaches. The camera itself may move WHILE the shutter is open, and the film / censor is exposed to the light, and thus introduce blur. Or it might move BETWEEN such exposures/shots, and lead to such ‘jumping around’ of the images within the frame.

A hand-held camera is likely to shake or move, during filming. The result is the same as if the subject had moved. The longer the shutter remains open, exposing the sensor / film to light, the greater the chance of blurring of the image due to the movements of the camera operator. The fewer frames per second being shot, the greater the risk that the camera will change position, Vis a Vis the target / object / subject, BETWEEN each exposure / shot. So ideally we will be able to place the camera on something ‘static’ like a camera stand, while filming. Or at least a ‘Glide Cam’ or ‘Gimbal’, designed to smooth out the movements of the operator. Or we can hope that the camera operator has mastered the art of hand-held shoots, and understands how to use their own bones and joints as a camera stand, or ‘Glide Cam’.

Start from a default base shutter speed of 1/60 for 30FPS or 1/48 for 24 FPS. As basic starting points or ‘rules of thumb’. That said, you can often get away with using slower shutter speeds for static shots, where neither the camera nor the subject move much. But if you plan to shoot action scenes where the camera will be panning fast, or the subjects moving fast, you will need to stick to the default, or you’ll get too much blurring of images.

If you use higher shutter speeds, much faster than the sample rate of our eyes in real life, you’ll lose the motion blur, and end up with unnaturally discrete / clean / sharp / clear movements in your subjects. But in terms of camera movement, it can let you capture action scenes more clearly without problematic motion blur due to camera shaking, or fast panning. But it will be fatiguing on your viewers eyes if you use this all the time. The trick is to plan ahead. Use the higher shutter speeds ONLY when you anticipate problems due to camera movement. Or when you require exceptionally high detail in your footage.

Also consider this. If you set your shutter speed (length of time of exposure) to 1/30, (one thirtieth of one second), the maximum number of 'shots' you can record / film / take per second is 30. So if your FPS was 60, your shutter would be remaining open for 2 frames during each exposure. You'd basically be duplicating shots. Wasting memory and CPU resources, and degrading image quality, with no gain. So be sure your FPS value is higher than your Shutter speed (denominator).

As a rule of thumb, **the higher you go with shutter speeds, the darker your images will appear**. This is simply because the shutter will be OPEN for LESS time, and thus the film / sensor will be EXPOSED to light for LESS time. Fewer photons will reach the film / sensor. It will be ‘soaked’ in less light. Think of sunbathing. The longer you are ‘exposed’ to the sun, the worse your sun burn. This is an example of OVER exposure. But if you get the timing ‘just right’, you can look wonderful, just like professionally shot movie footage. If you are not out in the sun enough, you'll look under-exposed. O.K, dermatologists will be going out of their heads at this analogy. But I think it's a good one still. And not a single cat or bird has suffered in it, as they sadly, often, are made to.

To recap, shutter speed determines how long each frame of analog film, or how long the digital sensor, is exposed to the light, and to the object/subject being recorded. The longer this EXPOSURE is, the more light that can be recorded, and thus the greater the quality of the image. However if the subject moves WHILE the shutter is OPEN, you will get 'motion blur'. Which is NOT bad in and of itself. And can in fact be desirable. But often undesirable. So plan for it. To increase it. Or to avoid it. As suits your artistic purposes.

Advanced use of ultra-low shutter speeds to achieve a particular effect, such as blurring out objects from time lapse footage

The following example demonstrates the interaction between the various settings, and lighting conditions, and what you hope to achieve from the final outcome. There is definitely an 'art' to it, which can take a while to develop. (No pun intended!)

You **can use shutter speeds cleverly to effectively remove, by deliberately 'blurring out'** moving objects/subjects from an image. You simply set the shutter speed so slow that anything that moves even at walking pace, will move so much, within the single frame, that they end up nothing more than a blur, with no recognizable features, in the frame. They will more or less blend into the background. This effectively 'removes' pedestrians or cars from a street scene. Of course you will want to frame the shot so that the moving objects take up as little of the shot as possible, or you will end up with an unusable shot. Smeared with blurry blobs! And you will want to set the shutter speed so that really slow moving clouds and trees do NOT blur. As a starting point, set your ISO to 32, and your aperture to F22, to allow the slowest possible shutter speed that will still allow a correct exposure. Such as 1/3. As always, these settings are reflexive. To allow you to use one setting, while still getting the correct exposure, in the particular lighting conditions you are shooting in, you have to adjust all the settings. So you might need even 'faster' settings.

If you have a stand or other fixed object, place the camera on it. Now we are going to do some 'interval timer shooting'. If you have '**intervelometer'** mode on your camera, use it. This function / program / device automatically takes a series of shots at fixed intervals. You can buy an external one as an accessory, if your camera didn't come with one built-in. Otherwise do your best manually. Set the intervelometer interval to 1 second. Hit 'Start'. And let the magic begin.

In our first example we do NOT have a density filter, so we can't afford to use the 'optimal' 2 second exposure. Instead we will opt for a 1/3 second exposure. It would take 4 minutes (240 seconds) to get TEN SECONDS of the sort of time lapse footage we need, to blur out moving objects, while shooting at 24fps, with the settings described.

The math is as follows. First round UP the shutter speed to the nearest second. So a shutter speed of 1/3 becomes 1. Multiply this by your fps rate. In our case 24fps. Multiply this by the length of the final clip you want to film/record. In our example 10 seconds. So we have 1 x 24 x 10 = 240 seconds which is 4 minutes.

With an external density filter in place, we can go with a 2 second shutter speed, and enjoy that 'sweet spot'. In which case our shoot will take 8 minutes. 2 x24x10 =480 seconds, which is 8 minutes.

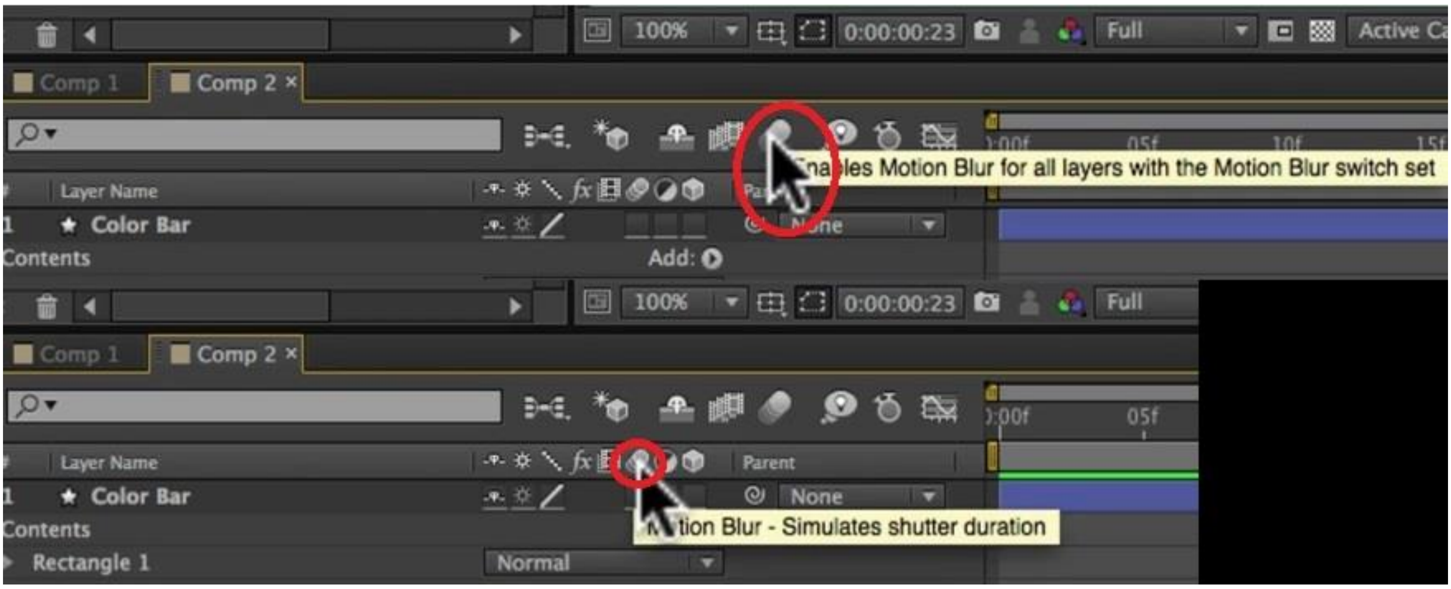
Be sure to rotate the filter and experiment with the different, often dramatic, 'looks' slight changes in the filter rotation can produce. Find one that you like best. Often polarized (rather than the standard 'neutral') density filters give the best 'look' and result.

There are many factors which cannot be predicted, so 'try and see'. The slower shutter speed allows ALL objects to move further, during each exposure (while the aperture is wide open). So the objects you WANT to move, and 'blur OUT', will do so, but maybe also the clouds in the sky, or the trees swaying in the breeze, that you do NOT want to be blurred, will become so too. So experiment with the exposure time that gives you the best result. Clouds and trees that appear to move slowly during the playback. With pedestrians and street traffic smoothly and fluidly 'blurred OUT' of the footage.

The 'sweet spot' for shutter speeds, for fluid, smooth, motion blur, is often around 2 seconds. If your digital camera has a '**Time-lapse movie' option** then use it. It lets you automatically film time lapse, and silently pull frames off the sensor. As there are no moving mechanical parts, you won't risk 'flicker'. You can then get away with using an aperture of F8 rather than F2.8, to get more depth of field. But if light conditions are very bright, you may not get a long enough exposure to produce a really smooth, fluid, blur, unless you have a **density filter** in place, to compensate for that brightness.

SLR cameras tend to be **inaccurate at choosing exposures**, which can result in **'flicker'** in a time-lapse sequence which is going to be played back as a continual clip, as 'footage'. This can be reduced by shooting with the WIDEST aperture, often 2.8 your camera is capable of. The aim is to avoid a situation where the 'blades', the mechanical moving parts, are constantly moving. This will require you to perfectly focus your shot, even at 24mm. So carefully choose your **focus point**. But this can easily lead to 'over-exposure', as too much light reaches your censor. Adding a density filter can resolve this problem before it becomes one.

Simulating longer shutter duration in After Effects with ‘Motion Blur’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les Motion Blur for all layers with the Motion Blur switch set
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tion Blur - Simulates shutter duration

Click on the ‘Master’ toggle for ‘Motion Blur’ at the top of the Layers Panel LHS, then enable ‘**Motion Blur’** for individual Layers by clicking on the empty box in the channel/column underneath the ‘**Motion Blur’** icon in the Layers. This icon is 3 circles arranged to suggest motion blur.

Frames per second (fps)

'Movies', 'Moving Pictures', are really a series of static photos, with one photo per 'frame' of film. Our brains 'sample' visual impressions about 24 times per second. Visual data is brain-CPU intensive. Higher sample rates would overwhelm the brain. Unlike 'Audio', where the brain CONTINUOUSLY samples incoming pressure wave per second. People who study evolution note that it is the EAR, rather than the EYE, that is the real 'mystery' in terms of how such a complexly functional, yet elegant, form could evolve.

You can draw simple pictures on the corner of their books, where each successive picture is slightly different than the previous, and then 'flick' the pages, to produce a 'moving image'. To show some action being performed by your 'stick figures'. This is exactly how the 'flicks', a.k.a 'moving pictures, a.k.a 'movies' evolved.

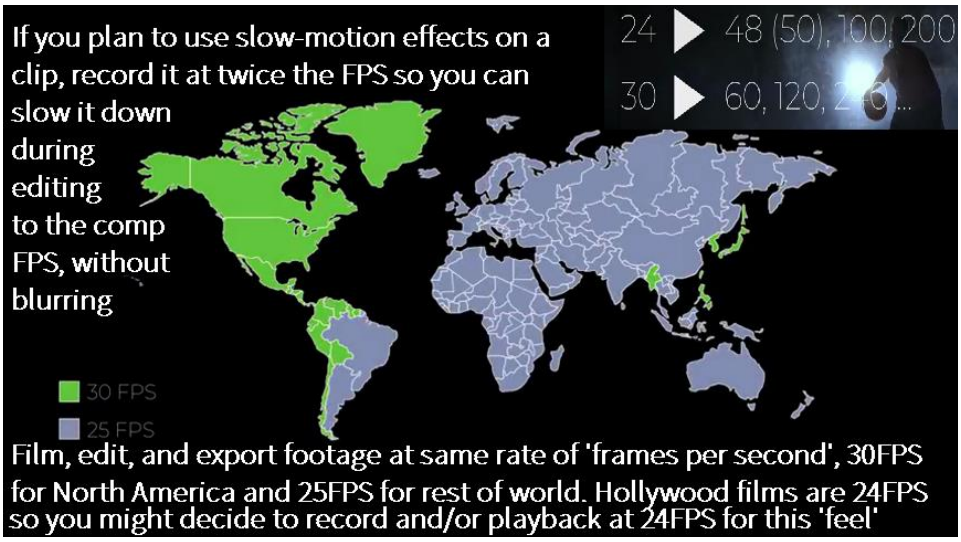
You can 'animate' static images in the same way in programs like After Effects. You program different 'Positions' and 'Rotations' and 'Sizes' (‘Scales’) for objects within each successive frame. The frames where an action starts or finishes are the ‘key frames’, in this context, with regard to ‘animating’ the images to suggest movement and turn your ‘stills’ into ‘moving pictures’. Movies. Thus we speak of programming animations using 'Keyframes'. These may be for vector graphics and shapes, or they may be for 'Puppet Pins'. So you end up with moving text and graphics, or moving 'Puppets'.

Basically if you show the brain 24 'snapshots' of something moving, basically sample it 24 times a second, the brain will construct from these 24 snapshots, these 'samples', a 'continually, smoothly, moving image.

Analog film places photos taken, once every 1/24th of a second, in a sequence, on a 'roll' of film. You can either cut up that 'roll' of film, and take each 'frame' 'negative', and 'develop' it, to produce individual photos. Or you could put that roll of film on a device which projects light through each frame in that the roll of film. You then rotate the roll of film so a new ‘frame’ moves through that projected beam of light once every 1/24th of a second. So the entire length of film moves through the projected light at a speed of 24 frames per second. 24fps. If you then place a white screen in a darkened room, and point the projector at that screen, you have a basic movie theatre. The viewers' brains will 'see' moving images on the screen. When in fact all that you've projected are static shots. I explain how the brain works in my other TROONATNOOR guides, if you are interested in understanding The Natures Of Our Realities And The Realities Of Our Natures. And in decoding the 'Matrix' we experience as 'reality'. For the most part we are all participating in a bad movie that the Cult of Judah has scripted, directed, produced, and in which they casted their own operatives for the ‘leading roles’. The ‘star’ roles. Like President. The Protagonists. And often the villains too. But by definition, anyone who attempts to resist, oppose, restrict, or expose the Cult of Judah, will end up being demonised and presented as the villain, no matter how good they really are.

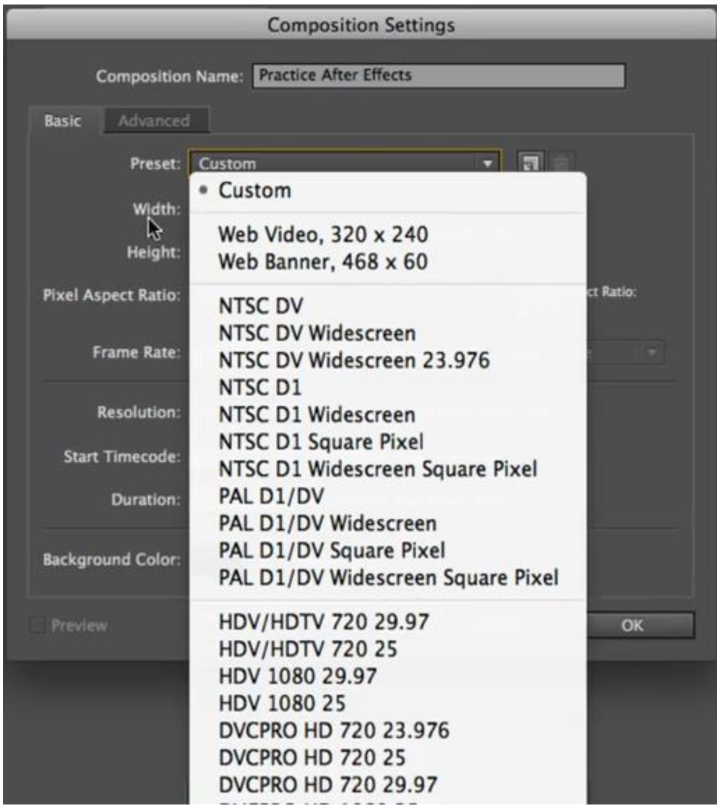
So a ‘movie’ is really a series of single photos played back in sequence, at a certain speed. A number of individual frames played back per second. That is what **'frames per second'** refers to. While **shutter speed** is how long the 'film' is exposed to light FOR, each time the shutter opens to record a NEW frame. Take the next photo in this sequence.

So a 1/100 shutter speed, when shooting at 60 fps (frames per second) makes sense. Because you thus **ensure that** the **number of frames per second being shot is less than the number of times the shutter is being asked to open and close per second**. You will be taking 60 photos per second, and the 'film' is 'exposed' to the light for 1/100th of a second each time. There will be time for the mechanical shutter mechanism to open and close the shutter fully. To open, expose the film/sensor to the light, then close fully, and be ready for the next shot. There are 60 shots. And each takes LESS than 1/60th of a second (1/100th of a second) to complete the mechanical action of the shutter opening and closing. Setting it the other way around, 1/60 and 100fps makes NO sense, as the shutter would not be able to open and close fast enough between each shot. So you won't end up WITH an actual 100 frames per second being RECORDED. And the shots actually recorded will often NOT be at a CONSTANT rate. So you may introduce artefacts where the subject/object does NOT move at a constant, smooth, rate. Rather they appear to 'jump about' on the screen. As they change their position in the frame randomly, rather than predictably. The sensor/film capturing samples / snapshots at random times, rather than at a consistent rate. So it might be 2/100ths (or more) of a second between some frames, and 1/100th in others.



If you plan to use slow-motion effects on a clip, record it at twice the FPS so you can slow it down during editing to the comp FPS, without blurring

Film, edit, and export footage at same rate of 'frames per second', 30FPS for North America and 25FPS for rest of world. Hollywood films are 24FPS so you might decide to record and/or playback at 24FPS for this 'feel'



Composition Settings

Composition Name: Practice After Effects

Preset: Custom

Conforming non-base recording fps rates to the Base (Project) rate FOR EFFECT

This is the fps you are planning to ultimately **'CONFORM'** the fps you recorded in, back up or down to, for playback. Hollywood films are typically 24fps (or 23.976 to be precise). Television is typically 30fps (or 29.97 to be precise).PAL broadcasts may be 25fps. But if you PLAN to play something BACK in 'slow motion', you might record SOME CLIPS at a faster rate. Or if you want to suggest the action is taking place faster than it really is, at a slower fps rate. In both cases the 'magic' occurs when you 'conform' your footage to the BASE fps rate.

Get your head around this. You record at twice the fps, so that during playback (when the footage will be played back half as fast as it was recorded), the action will appear to move at half the actual speed it took place at. You record at half the fps, so that during playback, (when this footage will be played back twice as fast as it was recorded) things appear to move at twice the speed they really did during recording.

Once you've 'grokked' the basic math, you can work out more subtle changes in playback speed, to slow down, or speed up, the final action, precisely to you taste. Without the need for any software plug-ins and the artefacts they can introduce. For the excitement of fast action, or the drama of slow motion, working back from the BASE fps rate, and setting your recording fps rate TO ATTAIN THIS EFFECT will usually yield superior results to attempting this with digital software algorithms/plug-ins.

For example your BASE fps might be 24fps, and you want to give the IMPRESSION of a 40% 'slow motion effect' during a particular scene or sequence, so you record THIS sequence or scene at 60fps. Now when it is PLAYED BACK at 24fps, it plays back at a mere 40% of the speed of the rest of the footage. To slow it down to just 20% of the speed of the rest of the film, you'd film it at 120fps.

If you wanted some scenes to PLAY faster, you'd record them at FRACTIONS of the BASE 24fps rate. For example, FILMING car chases or fight scenes at 12fps, and playing them BACK at 24fps, will mean the recorded frames will played BACK twice as fast as they were originally RECORDED. So you can get '6 million dollar man' to SEEM to be running TWICE as fast as he really WAS. Or you could film fight scenes and let the actors move quite slowly, and thus have greater control. But when played back, the audience gets the impression of really FAST punches and kicks. The same goes for any potentially dangerous scenes, or stunts, which you can film in very controlled, slow, real-time conditions, and thus with greater margins of safety. When played back at the base frame rate, the cars or fighters recorded at 12fps, and played back at 24fps, will APPEAR to be moving twice as fast.

Shooting at 30fps for 24fps playback for that 'Hollywood look', where actors appear to glide smoothly and fluidly, rather than merely 'walk' like mere mortals, and every action takes on an unmistakably 'movie' look as a result

One of the biggest challenges for most budge cinematographers is to get a real '**cinematographic feel'**. These are the result of several factors including the addition of light filters, and changes of speed, during post-production.

First up, we've been conditioned to view 24fps by Hollywood. So we associate this with 'big budget production values'.

So you might take this as your staring point. And keep in mind you will need a shutter speed of 50. And then consider that if you use higher shutter speeds beyond this, for some particular reason, you risk the 'stutter' effect where it looks like the camera is being jolted around during filming. With subjects suddenly changing position within the frame for no apparent reason.

But then we come to a real 'insider' tip. If you shoot at 30FPS, then slow this down to 24FPS (80% of the original speed), you can benefit in several ways. Firstly your footage can take on a more 'cinematographic feel'. It will also make any shaking or other movement of the camera less obvious. This will let you do more filming without the use of a camera stand or gimbal.

If you are using high resolution such as 4K, shooting at 30FPS can let you use a 1/60 shutter speed, and thus lower ISO values, with the result being clearer, crisper, more detailed, color-true, pristine, brighter, recordings.

To clarify the point, if you instead used a fps of 60FPS you would need to use a faster / higher shutter speed such as 1/120, which would necessitate the use of a higher ISO, which would introduce more risk of 'noise' / artefacts being introduced into your footage.

Playing back footage slower than it was recorded at adds that special '**Hollywood' cinematographic look** we are familiar with. Where every action takes on a slightly dreamy, magical, romantic fluidity and smoothness. So our film stars glide rather than walk. They appear charming as they merely look over their shoulder, their hair moving just perceptibly slower than it would in real life, thus adding that 'pixie dust' that we associate with Hollywood feature films. But up until right now, didn't realise HOW it was produced. Even reaching for the obligatory 'product placement' cigarette becomes just that much more elegant and sophisticated. Charming. Magical. Whimsical. Merely by being slowed down that fraction. Compared to this 'whimsical' fluidity of movement, mere mortals, in 'real' life, appear robotic.

This is the subtle 'slow motion' effect most people don't even notice. We don't even 'see' it AS 'slow motion'. It is subtle enough to simply appear 'natural'. To simply add that extra gloss of GLAMOUR to Hollywood feature films. To add that extra 'quality' to REEL life, that sets it apart from REAL life.

30/24 is 5/4 or 1.20 which means at 24fps PLAYBACK (when 30fps recordings are 'CONFORMED' to the BASE Project 24fps playback rate) it will be 20% slower. This adds that 'Hollywood', sheen, that EPIC quality to otherwise everyday actions. Even simply people walking down a street SEEM significant, and loaded with meaning. Literally meaning-full, when watched at this subtle 'slow motion' pace. Actions appear smoother, more elegant, and more stylish. Slightly 'out of this world'. Charming. Cinematographic. Artistic. Slightly MORE real. Thus 'SUR-REAL'. Captivating. And satisfying to watch.

This is quite a different an effect from shooting at over TWICE the playback fps, which leads to the dramatic, and obvious, ‘slow **motion’** scenes. The ones that can turn the most ordinary of actions into something truly special and interesting. And have a deep psychological impact on the viewer.

So television documentaries will have ‘slow motion’ shots any time they want to make something appear more dramatic, or to ‘suggest’ drama, and produce the EXPECTATION that something dramatic is, or is about to, happen. Even when all that is being shown is someone sweeping sand in the Egyptian desert, at an archaeological dig site. Or someone leafing through some old manuscript. Slow motion sets us up with the EXPECTATION of drama. Of dramatic revelations on their way. That something BIG is about to happen. Something LARGER than life. Because it is SLOWER than real life.

Consider how even in our real-time experience, really DRAMATIC moments can seem to be playing out, in real time, in slow motion. This is what slow motion plays upon. Manipulates. Replicates. And thus SUGGESTS to our mind. DRAMA.

But as with most things in life, you cannot just change ONE thing, without having to go through a complex set of considerations regarding ‘externalities’. Negative consequences resulting in other areas, as a result of the positive outcome the change was intended to produce.

In the case of photography we have those pesky reflexive relationships between shutter speed, under-exposure and over- exposure of film, resolution, and ISO settings (how SENSITIVE the film/sensor is TO the light it is exposed to).

Most cameras don’t have the processing power to shoot the higher fps at their highest resolution. So if you were going for 4K, you might not be able to shoot at 60fps without suffering a loss of resolution. A higher speed often comes at the cost of lower resolution. So you need to set priorities. And maybe just shoot the really fast action scenes, or some KEY scenes, at a higher fps, for ‘slow motion’ playback. This will take some planning. Or you may decide you do not NEED 4K footage, and simply ‘take the hit’, and sacrifice resolution in the name of those beautiful slow motion effects.

Another problem is that many cameras will require you to INCREASE your shutter speeds, to REDUCE your exposure times, when filming at the higher fps. Thus forcing you to INCREASE your ISO, especially in less than ideal light conditions, or light-ING conditions. Which in turn can introduce NOISE into the footage.

This is why many film makers will opt for the 30fps and 20% reduction in playback speed, at 24fps. You can usually shoot 30fps at your cameras highest rated resolution, while still gaining the benefits of smoother, more fluid, more ‘Hollywood’, footage. Without the ‘down sides’. Without the ‘externalities’. The ‘costs’ we just considered.

Shooting at 30fps for playback at 24fps can help stabilise your hand-held, glide-cam, and gimbal footage. Your pans and zooms and dollies will appear smoother, more fluid, and less robotic. More ‘Hollywood’. So now ‘budget’ film makers, no matter HOW low their budget, cannot ‘make excuses’ for boring footage. We ALL now understand this ‘insider’ trick. We now have pixie dust to sprinkle on our OWN projects.

Stutter warning

Stutter can result from using a Shutter Speed that is NOT a whole number multiple of the FPS. Such as in the previous example just discussed, where we have deliberately recorded at 30fps for a film we intend playing back at 24fps. With 1.25 FRAMES being RECORDED for every frame PLAYED BACK, you can get non-linear movement of objects/subjects. Every second or so the images might ‘jump’ from one position to another, without 'covering' the distance 'in-between'. The images can appear to 'skip', like a needle on a record player, as if frames have been removed, so the subject suddenly changes position on the screen, without the usual 'fluid motion'. Like a 'glitch' in the matrix. Instead of the smooth 'analog' transitions we expect, we get sudden jumps from one 'snapshot' to another, and if the subject has moved during the two shots, we get a 'disconnect', a 'gap' missing in their movements. They are in position X,Y one moment, then in a new position, without any data to 'fill the gap'. Think of 'stuttering' when speaking. Instead of continual, smooth, sounds coming out of your mouth, the words are 'broken up' into discrete / separate utterances / sounds / noises. Or think of your digital devices 'skipping' samples.

Choose the fps appropriate to the scene and the effect you want to achieve

Use **0fps** (individual photos / still images) and sequence them as single frames, to produce an 'animated sequence' like at the start of Marvel Comics feature films. Snapshots of action sequences. Moments of impact. Sudden flashes. A great way to catch your audience’s attention. Children’s television shows abuse this so much that children now find anything even close to ‘normal’ almost impossible to attend to. As being virtually static. In comparison to the mad rush and chaotic, constant flashing changes, of children’s animation / cartoons.

Use **1-15fps** to play back a series of photos, of discrete images, or discrete moments within some action sequence, to give the impression of disjointed, hectic, chaotic, hustle and bustle, and dis-connected images / experiences we have of modern life. Just things flashing momentarily before our eyes, which we have to respond to, with no context, or meaning.

For recording in real time, for real time playback, WITH the original audio track, or where the speaker’s lips can clearly be seen, making over-dubbing appear silly and ‘out of synch’, stick to **24fps**. This would be most appropriate for any sort of ‘talking heads’ shoot. Where we clearly see people’s faces and lips, as they are talking. We can also get away with this when shooting scenes where there is little or no motion, so that we would be free, later, to slow down the footage, if we chose, without introducing motion blur.

Unless we are planning FOR ‘hyper-lapse’, ‘Fast Motion Effects’, with extreme blur. Think of the interest you can generate by speeding up subjects to a blur, then slowing them, stopping them, speeding them up again. So we can ‘move through’ a crowd in quick time, to get to the ‘persons of interest’, and the ‘scene of interest’ within that sequence.

Use **30fps** for adding a cinematographic quality. 30/24 is 5/4 or 1.20 which means at 24fps PLAYBACK (when 30fps recordings are ‘CONFORMED’ to the BASE Project 24fps playback rate) it will be 20% slower. This adds that ‘Hollywood’ glamour, sheen, magic, pixie-dust, EPIC quality to otherwise everyday actions. Even simply people walking down a street SEEM significant, and loaded with meaning. Literally meaning-full, when watched at this subtle ‘slow motion’ pace. Actions appear smoother, more elegant, and more stylish. Slightly ‘out of this world’. Charming. Graceful. Enigmatic. Enthralling. Cinematographic. Artistic. Slightly MORE real. Thus ‘SUR-REAL’. Captivating. And satisfying to watch. They demand our attention. Significance is SUGGESTED and IMPLIED. Even though we are simply watching routine, mundane, everyday, ordinary actions. We enter into a sort of trance or dream-like state, by association. For we associate such ‘strange’ effects WITH dreams and trance states. So this effect TRIGGERS these states. See my guide to Neuro Linguistic Programming for details about ‘triggers’ and ‘trance states’ and ‘the art of suggestion’. Basically manipulating people to feel and react extra-ordinarily to ordinary situations. Which accounts for how ‘phobias’ are established, and triggered. And how public opinion can be so easily manipulated. First conditioned. Then triggered. To produce a panic. And in the face of that fear, submission to the authority that they’ve been conditioned to submit to, and associate with, ‘solutions’. As their ‘messiah’ and ‘saviour’. When like the Shepherd that protects its flock from wolves, so it can eat and fleece the sheep ITSELF, government IS the enemy. The CAUSE. And NOT the solution. The PRIESTS of the religion are NOT messiahs or saviors, but true devils in disguise.

Using 90-120fps lets you apply a whole variety of ‘speed ramping’ techniques during editing, and in Post-Production. You will be free to change between normal, and hyper, and slow motion, over the course of a shot or scene. With careful planning you can do this by recording at different fps, for different shots. Calculating how they will look when ‘conformed’ back to the base project fps rate, as ‘slow motion’ or ‘hyper lapse’ or even ‘still photos’. However unless you filmed every scene several times from the same angles at different fps, you will be stuck with your plan. UNLESS you shoot at the fastest fps, you will hit limits as to how much you can slow down footage. But if you can manage to shoot at a very fast fps, you will later be free to ‘wing it’. You are free to change the speed. To ‘try and see’ what works. And go with it. To ‘play with time’, and ‘ramp up’ and ‘ramp down’ playback speed, and move between slow motion, ultra-slow motion, freeze frames, and hyperlapse (ultra-fast, often discontinuous-jumpy looking) effects.

Faster recording fps rates tend to ‘smooth out’ camera shake and ‘stabilise’ your footage. Further, it gives you the option of editing out unusable footage, even as precisely as removing individual frames where they are duplicated, and where the subject did NOT move, while the camera DID move.

And consider that a few minutes of 120fps footage slow down to a lot of minutes of 24fps footage. So iIf you recorded at 120fps, even if camera shake ruined MOST of the shoot, you can ‘cherry pick' from the material, discarding what is TOO shaky, and retaining ENOUGH useable footage to 'save the day'.

Use **180+ fps** for **super slow motion**. You might decide that it would be great to slow down a sequence to ‘freeze frame’ one moment in time, for a few moments, before returning back to the rushing action. You may have to limit yourself to taking very short clips, seconds at most in duration, to give your camera time to 'buffer' and process the data, before being able to continue 'filming' again. So you will probably find it better to film at 120fps, then use 'Optical Flow' or 'Twixtor' to slow down the footage, in Post-Production, even slower than 'conforming' alone (from 120fps down to 24fps) would automatically do.

Consider that in real life things often happen too fast for us to be able to really see what is happening. If you are producing instructional / teaching videos, slow motion can allow you to ‘zoom in’ on a sequence of actions, in terms of focus AND time. So now you can SEE what the musician’s fingers are doing. On the keyboard or fretboard. As they pick the strings or ‘tinkle’ the ivories. You can see the moves of the dancer, or martial artist.

At such high fps rates, many cameras will tend to automatically 'crop' the sensor. Which effectively equates with a zoom in. But you can use this to your advantage, rather than disadvantage, by anticipating this, and shooting close up and tightly focused on your subject, and allowing the background to 'blur out', leaving YOUR target subject, REFLEXIVELY sharper LOOKING, RELATIVE TO the blurry background.

Camera manufacturers often add this ‘crop’ default to higher fps rates, to compensate for the degraded resolution/quality resulting from using these higher fps rates. So work with them. And if they don’t automatically crop, consider taking a more MACRO approach, and shooting CLOSER to the subject. This way we can ensure that the MOST important elements of the shots get as much of the available 'bits' as possible, per frame. So the subject will LOOK sharper. Which is what cropping is intended to do.

We employ CONTRAST and REFLEXIVITY to manipulate the impressions viewers will construct out of the data we offer. To make things APPEAR clear, sharp, and high definition. When in fact they are NOT. Which is basically what the Cult of Judah Occupation Government of YOUR nation has been doing, in order to manipulate YOUR impressions of reality. To DISTORT our impressions. To ‘fog’ our minds. To ‘blur’ reality. To take it OUT of focus. To misdirect us to focus on ONLY what THEY want us to notice. To see. To experience. To compute. To process. To EXCLUDE everything else they do NOT want us to notice. To think about. To reflect on. To process. To consider. To SEE. To construct a ‘social reality’, an ‘official narrative’ and ‘official fiction’ which distracts us from, and prevents us from experiencing, the ACTUAL reality of our lives, and history.

Producing extreme slow motion effects

You can separate an object or subject from its background, using masking, or film against a ‘greenscreen’ backdrop, and remove this background, to have your subject / object as the only pixels in a layer. So that their background is now transparent. You can then import / add this layer over any background you like. And have the foreground layer, your object/subject, move at a different speed to this background layer. And in this way create all sorts of illusions and effects. From parallax effects, to ultra-slow motion.

You can, in After Effects, separate video footage into in its individual frames. Then extend the duration of each frame. If you started with a high fps to begin with, you can end up with an ultra-extreme slow motion effect.

Move the CTI forward one frame at a time, using ‘**PgDn**’, and then hit ‘**Alt+Ctrl+D’** to split the layer at the CTI, and move all the frames in front of the CTI down into a new layer. Keep repeating this until you have each frame on its own layer, but still in the original sequence. You will end up with a series of staggered layers, each containing just one frame. You can then select all the layers, and change the duration of the frames, using the ‘Time’ effect. You can now decide for how much time each frame will appear on the screen.

You can also separate a subject or object from its background, using masking or greenscreen techniques, and then use the ‘Puppet Tool’ in After Effects to turn the object / subject into a puppet figure. You can then have it move as slowly as you like. And as fast as you like. Between individual frames for ultra-fast sequences, or multiple frames for ultra-slow motion simulations. .

Planning ahead for ‘slow motion and hyper-lapse’

The BASE RATE fps is the one at which your camera will usually record its highest quality image. Not just in terms of resolution e.g 4K at 24fps. But because this MEANS spreading the available number of bits over more frames, so each frame, each individual photo, gets less 'bits', which equates to less INFORMATION from which to render the actual image, which tends to introduce more 'artefacts', similar to the way using mp3 instead of .wav files for audio can 'compromise' your audio quality. Also you will be FORCED to use higher shutter speeds, and thus lower /shorter exposure times, which will reduce desirable, natural, motion blur. And reflexively, to accommodate the higher FPS, your camera may change its 'crop factors' and other settings. So this will usually mean you end up recording at 24, 25, or 30 fps. So stick to BASE fps for MOST of filming, and keep higher and lower fps for 'special sequences', carefully calculating the fps for THESE scenes based on the following. If your final fps is going to be 24, then generally you will want to record at WHOLE NUMBER MULTIPLES of 24fps (or whatever your BASE fps is going to be). Unless you want that typical ‘Hollywood’ look and feel of recording at 30fps, for 24fps playback. You MUST have a WHOLE INTEGER number of frames RECORDED for every frame PLAYED BACK if you want to be SURE to avoid 'FRAME STUTTER'.

Using slow motion to add ‘gravitas’ and interest to the most uninteresting of ‘action’ scenes

Recording at 48-60fps for a project with a base fps of 24fps is a typical use of ‘slow motion’, to add 'gravitas', 'grace', 'charm', 'magic', and a feeling or sense of 'significance' to medium speed actions such as people laughing, slow-dancing, clapping, or walking.

It is not necessary to worry about the audio being ‘in-synch’ in the context where such slow motion effects are used, as the audience is not going to be hearing what anyone in particular is saying or even singing.

The real-time audio will be muted in post-production, and new audio will be played over the scene.

Slow motion in music videos

If you are going to use this effect in a music video, and you want the singer to appear to be singing in real time, you will need to consider the following.

If you are going for a subtle 20% slow motion in the VIDEO, have the singer, during recording, lip-synch to a copy of the song played back 20% FASTER.

Think about this.

You would record at 30fps for 24fps playback, to get a mild ‘slow motion’ effect. The playback would be at 80% of the original speed you recorded at. So everything will appear to move 20% SLOWER.

This would slow down the audio by 20% also. You’d get pitch-shifting, and everything would sound ‘deeper’ in pitch.

So you would need to overdub the original audio over the slow motion track. Which would normally leave your singer / performer ‘out of synch’ with the audio. Their lips would move slower than the words would appear to be being sung.

So to ensure the performer’s lips are in-synch at the final base project fps rate, which will be 20% slower, you need to ensure your performer is lip-synching 20% FASTER, during recording.

You simply play the backing tracks, or recording the singer is going to perform their 'lip-sync'd' version to, 20% FASTER than normal. This is easy enough to do with any basic DAW software.

This will look odd during recording, and when monitoring the recording at 30fps, the recording fps rate.

But AFTER we conform the recording back to the base project rate of 24fps, the singer's mouth and lips will be 'in-synch' once more.

You will get the 'magic' of the ultra-smooth and fluid body movements of the singer, while remaining 'in-synch', and not 'giving away' the trick. The singer will simply be granted that 'glamourous' look that Hollywood stars enjoy, in feature films. A 'transferred glamour' that adds to their 'star' status. Their 'allure'.

You can go for even more dramatic effects, by having the singer deliberately move in slow motion, in real time, while singing back to the recording played back at half speed, or even slower. The action around the performer will suddenly 'speed up' to TWICE the original speed, when you 'conform' the footage back to the base project rate, which is twice as fast. During playback, in the video, the performer will appear to be moving and singing normally, while all the people around them will appear to be rushing past them, at twice their original speed.

This effect is commonly used in music videos. The singer lip-synchs to the tracks played back at a multiple of their normal speed. The reverse of the fraction that the recording fps is going to be reduced down to, in the project. So if the project base rate was 30fps, and they recorded at 60fps, the singer would have to practice lip-synching to the song at TWICE the normal speed. Singing it TWICE as fast as normal. So give them a 'heads-up' in advance, so they can get some practice in, before the expensive shoot begins. During which a LOT of people are 'on the clock', and the 'window' of 'ideal light conditions' is quickly closing. The sun setting or rising.

Your singer will, after conforming your recording to the base project fps rate, appear to be singing normally. However their every movement will be transformed from the everyday, and imbued with a new grace, elegance, charm, gravitas, romance, magic, and significance.

When lovers in 'real' life, on the big screen, first meet, their world is changed in an instant, and time seems to slow down for them. They have only eyes for each other. Their love literally 'stops the world spinning'. Everything happens in 'Slow motion'.

The same happens during crises, such as car accidents. Everything seems to happen in slow motion. Or at moments when crucial decisions or REVELATIONS are being made, such as the racing car driver noting the crash ahead, and taking evasive action, or the archaeologist suddenly brushes aside some debris to REVEAL the entrance to a TOMB. Or the gunfighter seeing their opponent reach for THEIR gun. Or the hero watching as the logs loosen from their ties, and hurtle down towards the heroine, and they must decide what they are going to DO, to avert disaster, and 'save the day'.

Guitar solos that last a few moments are given a visual eloquence by virtue of slow motion. The guitar hero, as they strut and pose for the camera, becomes a SUPER hero, when replayed in slow motion. Drama. Gravitas. Eloquence. Elegance. Fluid grace. Magic. Allure. Meaning. Significance. Glamour. All these become theirs, during that slow motion replay. Watch a Whitesnake, or any other sort of 'glam rock' video from the 80s to SEE what I'm talking about.

Of course this effect can be overused and abused. Television documentaries exploit the psychological impact of slow motion to make boring footage SEEM exciting, interesting, and dramatic. To SUGGEST at least the EXPECTATION that something is about to happen. A mystery is about to be REVEALED. Some secret lost to the ages is about to be uncovered for our amazement and enlightenment. Even though all that appears on the actual screen are people sweeping sand at an archeological dig. The slow motion simply SUGGESTS, psychologically, subliminally, non-consciously, DRAMA. We are lead to EXPECT something IMPORTANT and SIGNIFICANT and MEANINGFUL and thus INTERESTING is ABOUT to happen.

Sampling impressions to communicate 'the gist' of things

Editing allows you to convey a great deal of information in a short amount of 'screen time'. You usually have only 90 minutes for the entire 'show'. So often you will want to convey 'impressions' in 'snapshots'. To 'get across' the IDEA of a busy family scene, a breakfast, with kids going off to school and others going off to work. Or a funeral. Or a wedding. Or some other celebration.

Collages are a common technique, to convey a lot of information that is SALIENT to the plot, and perhaps presages what is coming, in a short period of time. In a few dis-continuous shots. With most of the 'data' edited out.

Thus the 'cut to'. We rarely show entire sequences of action. Instead we show the start, some intermediate point, and the end, from different perspectives, angles, points of view, and camera set-ups, to keep it interesting. Thus what might take a few minutes in real life, takes only a few 'shots' and moments in 'reel' life.

We tend to 'absorb' a lot of 'snapshots' of action and 'glean' information from them. In REAL life, once we have 'gotten the gist' we usually move on. People rarely even listen to entire sentences, when interacting with people in real life. We hear some utterance, and respond to it, internally, long before the person has fully articulated their sentence, let alone their ideas. We only ATTEND to a FRACTION of what is going on. Or what people are saying. We quickly 'jump to conclusions' about the 'gist' of what we are observing or hearing. Often erroneously of course. But we have quite small CPU's, called brains, which have evolved to PARSIMONIOUSLY distribute their resources. To SAMPLE data, rather than

ATTEND TO the complete impression. We are ‘triggered’ by particular words and looks and tones and gestures.

So we are ideally set up for this sort of cinematographic treatment. For this sort of presentation in REEL life. In movies. On the screen we can artistically create a series of ‘snapshots’ of a scene, to ‘carry the overall feeling, mood, and tone of a scene or sequence. To convey the ‘gist’ of a situation, condition, or experience. At a wedding we can focus, in turn, on a beautiful child laughing, a happy old woman taking a drink, someone reacting with laughter to something someone else is saying, the happy bride laughing and drinking champagne, the proud parents. All in 'broken' shots. Often in slow motion, to add gravitas and affect to the everyday. To give us a chance to ‘soak up’ the emotions and impressions. Presenting the 'gist' of the scene, quickly, and aesthetically. In a way that is satisfying. Sampling 'the best and most interesting and most aesthetically appealing' bits. Collaging them. Even slow motion shots of the beautiful food being cut and raised to their mouths, and close ups of the wine sparking in the glasses being raised. It gives the IMPRESSION of how we DO experience HAPPY or 'significant' moments. NOT in their completeness, with their full context, but with a sort of 'dreamlike' quality where we FOCUS on something, to the exclusion of the rest, and jump from subject to subject in a scene, having gotten the 'gist' or 'impression' of one character quickly, then turning to see how their interlocutor is responding, then turning to see where that gorgeous laughter we can hear is coming from, and what has produced it. Most things in most scenes in real life are NOT attended to, other than peripherally. But what we notice peripherally can attract our attention, so we then turn to look at something, even as something else has already interested us, so that we give the impressions little more than a glance at best, before moving on to some NEW impression. So our real life observations and experiences are disjointed. Non-continuous. And made up of incomplete impressions, rather than detailed observations. Thus ‘eyewitnesses’ usually make notoriously bad witnesses during trials and court proceedings. We are more likely to have hyper-attended to some small, random, impressions, than to the exact appearance of those present during a crime. We tend towards hyper attention to details that INTEREST us at the time, while rest of the data is pretty much ‘a blur’. Thus we might be able to describe the figure of someone we found particularly attractive, in detail, and only have a vague, often erroneous, recollection of what ‘the bank robbers looked like’.

We notice CHANGE, so the dramatic impact of what happens NEXT can be increased by ‘ramping down’ the tension in what is happening NOW

CONTRAST refers to DIFFERENCES and thus CHANGES in impressions. It is the CHANGE. The DIFFERENCE. BETWEEN things.

Our brains have very poor CPU’s. We have very little RAM. We have evolved to be parsimonious with our attention. To ‘sample’ data rather than attempt to process continual streams of data. We can only hold about 7 NEW items of information in our short-term memory. Then new impressions, as they are produced, will ‘push out’ existing impressions, from our short-term memory. From our conscious awareness.

We have evolved to attend to CHANGES in our environment. These indicate potential threats or opportunities. The catch our attention. Capture our interest. We are attuned to notice CHANGE.

So play to this, by ramping your tension up and down. As you would ramp audio up and down. Or color. Or brightness. Or action. Or emotion. CONTRAST is what makes things distinct. The DIFFERENCE between things. And the difference over time. What we call CHANGE.

There are some absolutes. Like pleasure and pain. Consciousness and unconsciousness. But between these absolutes there are continuums of relativity. And the DEGREE of something is what provides the CONTRAST. The CHANGE between relative levels.

So you can make your foreground LOOK sharper, and clearer, simply by making the background blurrier. Without actually increasing, in absolute terms, the sharpness of the foreground images, you can draw the eye of the viewer toward the foreground, and produce the IMPRESSION of greater clarity, simply by making the background blurrier.

You can make something SOUND louder, simply by gradually ramping down the volume up to this point, and then suddenly returning it to the ‘usual’ level. It will suddenly be LOUDER, in relative terms.

If you keep your viewers on the edge of their seats for the entire film, without any ‘breaks’ in this tension, they will become habituated to the high tension. It will have less impact. It will be hard to maintain the original IMPRESSION and FEELING of tension. It will become ‘the new normal’. But if you break the tension with some ‘funny’ interludes, or some ‘romance’ or even ‘erotic’ breaks, you can return the audience to the OLD ‘normal’, so that when you once more introduce tension, the audience will FEEL it. You will have ‘ramped down’ the tension, leaving yourself all that ‘headroom’ to ‘ramp it back up’. Perhaps suddenly, for the most dramatic impact.

An entire film in slow motion will have less impact than one where the key scenes are in slow motion.

Showing some sequences in hyperlapse can be very interesting. But an entire film? Probably not.

Think of how good the FIRST bite of junk food tastes, compared with the last bite. How much satisfaction it brings. How MUCH taste you experience. How much PLEASURE.

Consider how a chef will offer ‘palate cleansers’ between courses, in order to ‘re-set’ the taste buds.

Eat one spicy chip. Focus on the flavors. Then eat a whole bunch more. Then eat one, and see if you can recreate the original experience. Probably not. For your taste buds have become ‘habituated’.

Think of the drug addict’s original ‘high’, compared to the mere ‘calming’ effect of the same drug, after they’ve become ‘habituated’ to it.

Think of how potent painkillers are when you first take them. They relieve pain immediately, and offer other pleasant side effects. But if you become dependent upon them, you need increasingly stronger doses to even attempt to gain the same effects.

After riding my motorcycle at high speed for quite some time, when I was forced to slow down to 70, I felt like getting off and walking. It just seemed so slow!

So contrast ‘sweet’ with ‘savory’, in visual and emotional terms. Fast with slow. Soft with loud. Dramatic tension with relief. Slow motion with normal speed, and hyperlapse sequences.

Focus on some part of an action, such as a dancer twirling. Or the boxers punch ‘landing’ on their target. The bullet leaving the muzzle of the gun after it has been fired. The first moment after an explosion, when everyone has just realised what has happened, and the danger they are in. The moment before impact during a car accident, just as the driver and passengers REALISE the jeopardy they are in. The DECISIVE moments in a scene.

You can ‘ramp down’ the speed from normal to slightly slow, to ultra-slow motion, then ramp back up to normal speed, and onto hyperlapse, to present a sequence of action from start to finish, with appropriate noises to suggest the drama of the action.

A person driving at normal speed, then suddenly realising a truck is plummeting down the side road towards them at 20% slower speed, then the impact, at 50% speed, and then as the car tumbles, perhaps ultra-slow snapshots of the grimaces and looks of terror and shock on the faces of the different actors, before speeding the footage back up, to watch the car tumble and roll down the road.

You might consider speeding up some action scenes that were filmed at a safer speed, just to make them LOOK more ‘dangerous’. Like car chase scenes. Or fight scenes.

Fight scenes can become boring. But if you ramp the speed of the action up and down, to capture key moments in slow motion, then allow others to fly past at ‘surreal’ speeds, you can maintain interest, and even ‘up the ante’ for all future ‘fight scenes’.

Emphasize particular moments. Speed through less important moments. The slow motion ‘final knock-out blow’ is a Hollywood staple. You can add all sorts of ‘shock wave’ effects and ‘dramatic’ sounds. To emulate that real life feeling we often have of time ‘slowing down’ during critical moments when the action has REALLY captured our attention, and we are ultra-focused on something in particular, to the exclusion of all other impressions.

These don’t have to be dangerous action scenes. They can be ZEN moments with a single flower, or rain drop, or oily puddle of water.

Or your character is walking through a random, impersonal crowd of people, and suddenly THAT man or woman ‘catches their eye’ as they ‘glide by’, and that ‘moment’ in which they ‘glide by’ passes in slow motion. Full of magic. As if time is standing still for our ‘lovers’.

Slow motion lets us truly indulge in moments that usually pass so quickly, we barely have time to register them. Let alone fully taste, and enjoy, and immerse our senses in them.

There are moments we truly wish COULD last forever. In REEL time they CAN. Just as they can in our memories. In our imagination.

Choreograph timings. So the audience becomes ONE WITH the action. The viewer of the dancer BECOMES the dancer. The dancer BECOMES the dance. Slow motion can help achieve this effect. As can ‘ramping up’ the speed with hyperlapse sequences, before returning to the base project fps, and further ‘slow motion’ sequences’.

Keep things changing. Variety is the spice of life. It is the CHANGE in things that we actually PERCEIVE. These are what make up our ‘sense impressions’ and ‘experience’ of life. Literally. Death is constant. Life is variable. Remove change, and life becomes a living hell. Ask any ‘Holocaust’ whistleblower a.k.a historical revisionist, or Banking Whistleblower, who has been placed, as a ‘thought criminal’ and thus ‘potentially infectious’, in solitary confinement for months, even years, on end.

Unless your film’s TONE is all about the tasteless, bland, formless, stifling, claustrophobic, postmodern experience. Or how ‘the new normal’ IS approaching solitary confinement. As I write this it is a CRIMINAL offense in Estonia to publically assemble closer than TWO METERS from another human. Imagine trying to have a critical discussion about current affairs, let alone carry out a protest! In fact gatherings of more than 100 people are also CRIMINAL. And the pretext? Some random mutation of existing viruses that has so far killed FEWER people than the common cold has, over the same period. Whose threat level we only have on HEARSAY. From that most trusted of sources, CHINA. Since when did people in the ‘free west’ take their cues from Chinese Government propaganda? Is this a test run, to see just how quickly and easily the government can impose a ‘State of Emergency’ or ‘Martial Law’ and totally suspend basic human rights, liberties, and freedoms? Or just the start of something big? The full ‘roll-out’ of the Cult of Judah’s ‘New World Order’? Do they have some particular reason to want people to remain at home? All schools, libraries, theatres, cinemas, and most shops and restaurants closed, and people isolated in their homes? Could the more creative of you brainstorm scenarios for science fiction films based on that? Do they want everyone close to their Wi-Fi routers? To bombard them with electromagnetic radiation? Is a comet headed this way? Do the government know something they are not letting us in on? Or have they planned something they have no desire to let us in on? Consider the costs to small businesses! Of course those people 'working' for the government will get a fully paid holiday, for 6 weeks. They won't complain. But what of the businesses that rely on customers FREE to choose their services? Rather than governments which can FORCE people to PAY for THEIR 'services'. Whether or not they want them. Let alone whether they BENEFIT from them or not. The Cult of Judah want FIXED ideas and beliefs. NOT change. The only 'change' they want is incremental. A continuation down the path to their 'One World Government' where a few elites are the new princes of the earth, and the rest of us their slaves. So far we have behaved like slaves. Accepting our servitude and submitting to 'authority'. Calling it 'Government'. In the west they've provided a thin veneer and façade of 'democracy' to make a good impression on the sheeple. But 'the NEW normal' is Martial Law, and States of Emergency, where the true nature of our government is revealed. That of dictatorship of the masses by a few elites. Interconnected in each nation, and over each continent, to form a de facto 'One World Government' by the Cult of Judah, FOR the Cult of Judah elites.

It is CHANGE that INTERESTS us most. That CAPTURES our ATTENTION. We are tuned into CHANGE. So use this awareness consciously, to generate INTEREST in the action. To time CHANGE to maximise the IMPACT of the scenes that NEED the GREATEST impact to 'work'.

If you set up the expectation that something BAD is about to happen, but draw it out a bit, but not TOO long, then simply having a cat jump out from behind a door can make the audience jump out of their seats. But if you drag it out TOO long, you will 'wear out' the tension.

It's probably been overdone so much now that we EXPECT, when our protagonist is calmly driving down the road, that a truck is going to suddenly appear from a side road and plough into them. But that scene in 'Apocalypse Z' where the highway patrolman is calmly walking to the car window, and the truck suddenly appears from nowhere and 'collects' them, was one of the most dramatic film experiences I had ever had, at the time. Now such things are probably too predictable to risk copying. Audiences will be saying 'I bet a truck side-swipes them any moment now'. I've said that to myself several times lately. And each time I was correct in my expectation! And the scene thus 'bombed'.

Image stabilisation in the context of shutter speeds and 'camera shake'

You probably already comprehend the superiority of an optical zoom over a digital zoom. One is physical. Mechanical. It is analog. It works using an adjustable lens. The other is little more than a digital 'magnifying glass' that enlarges part of an already captured image, rather than actually focusing a lens on some part of a subject, before recording it.

In the same way there are analog and digital stabilization solutions, to 'correct' for camera shake and other unintended, and unwanted, camera movements during recording. Optical stabilization is analog. It is a physical correction of the movement of the camera in real time. During recording. Digital stabilization uses an algorithm / software program to 'correct' for camera movement after the images have already been captured. The optical / analog stabilization is usually more reliable, and yields better results, than its digital / software equivalent.

'Ibits inbody image stabilization' is designed to allow sharper images at longer/slower shutter speeds, by compensating / correcting for shaking and other movement of the camera while the shutter is open. This way you get the benefit of longer exposure, and thus more time to 'harvest' the available light, without the usual blurring and similar artefacts due to camera movement while the sensor is exposed to the light.

Stabilization features should be seen as a 'safety net' for when you simply cannot use a tripod. A tripod or other stable base for the camera is always the superior option. This way you can use shutter speeds of 6 to 10 seconds. Using a tripod in conjunction with a flash or lum-tube or other source of lighting, no matter how small the source of light is, can make a huge difference, so artificial lighting of any kind is always the first choice, if the option is available.

FPS rates and blur

Our eyes operate at a sample rate of around 24 frames per second (FPS). So if you take 24 photographic stills of a moving object, per second, then hold them in one hand by the edge, and 'flick' through them, you will see a moving image. You will have produced your first 'Flick'. Your first 'Movie'.

Move your own hand back and forth, in front of your face, and once your exceed a certain speed, the image of your hand will begin blurring.

Digital cameras can take a much larger number of shots per second, sampling the visual images, MORE OFTEN than the naked eye and human brain do. And which analog cameras were developed to shoot, at. And so where you would get a blurred image with analog film, or the naked eye, in reality, with digital, there is no such blur. And this can feel / look unnatural. Because in nature the objects moving at the speed shown in the video would be blurring, when viewed with the naked eye. So it is common for video processing software to allow you to introduce 'blur' into digital footage. So now the fast moving fight or chase scenes look / appear more realistic. More real. More authentic.

FPS rates, ISO values, shutter times, F2 lenses, and lighting

The more frames per second you ‘shoot’, the more light you will need, to get a clear, crisp, detailed image. If you shoot at 120 FPS at night, or in low daylight, you will need to bump up your ISO, to ensure your sensor is sensitive enough to the available ambient light. That and/or artificially light the scene.

You will also need to reduce your shutter speed, to as low as 2.8 or even 1.4. In which case you will probably need to buy a special lens. A second-hand **F2 lens** (faster than the standard lens most video cameras come with) could do the trick without breaking the bank. It will let more of the available ambient light reach your camera’s sensor. Thus allowing you to shoot brighter, clearer, crisper, higher contrast images in lower lighting, than the lens most cameras come with. At a lower ISO, so you run less risk of introducing ‘noise’ (artefacts) such as distorted colors, and grainy, ‘mushy’, images. So plan ahead. If you intend shooting in low light, make sure the camera that appears at first glance to be a ‘bargain’, will allow you to take advantage of relatively cheap second-hand F2 lenses.

Seek out a large light source during your night shoots, and take advantage of these to ‘light’ your subjects, where possible. Shop fronts and large L.E.D screens are ideal.

Where you can’t find enough light, go for a silhouette. Basic military training teaches you never to stand on a ridge line or with a light source behind you, which would ‘silhouette’ your form. The eye is drawn to a dark shape contrasted against a brighter background. Even in almost total darkness. The mere contrast draws the eye. In fact all our senses measure changes in some stimuli, rather than absolute values. So take advantage of this fact, and go for a silhouette of your subject, rather than attempting to capture them in detail. The dark silhouette of a head against a brighter background immediately draws the eye of the observer in, to focus on the HEAD. This can be a good alternative to attempting, and failing, to capture details.

This brings us to the very important topic of lighting.

Shooting in less than ideal lighting conditions

Many cameras can have trouble shooting in normal room light, without the need for special lighting. So simply to record in normal ambient light, at home, you have to look for camera that handles low light well. It is not about ‘night’ shooting, but about the convenience of being able to capture useable footage without needing any special lighting, in normal daylight situations, in less than ideal natural light conditions.

For many people, using a mobile phone, or a webcam, with a decent ring-light, will be the best available option. Rather than acquiring a dedicated video camera, then investing the time and effort to learn how to adjust its settings, in order to take advantage of its ‘low light’ capabilities, in order to shoot without that additional, artificial, source of light.

At the end of the day, the results you get with your phone, and a cheap ring light, or similarly priced conventional LED light, will probably be superior than those most of us will get with a much more expensive video recorder, without the extra lighting.

If we buy a dedicated video camera, then end up buying the lighting anyway, the marginal benefits, compared to the marginal costs, of that video camera, will shrink drastically. We might just as well have stuck with our phone or laptop webcam, and bought the lighting immediately.

In other words, study this quick guide, to see if you are up to fiddling around with a video camera’s settings, to film in low light. Then decide if you are better off investing in cheap lighting, and using this with your existing webcam or preferably mobile phone camera, rather than incurring the much higher expense of an additional video camera which will, when correctly set up and used, make the extra lighting unnecessary.

Shooting with the highest resolution is the best option in less than ideal lighting conditions. The result will be cleaner, crisper, brighter footage, all other things being equal. So if your camera has the option of recording in 4K, consider using it for any shoot where light might become a factor. This might reduce your options for using higher fps rates. So plan each scene and sequence in advance. If you plan to use slow motion effects, ensure you have the best possible lighting conditions you can find, or arrange, to shoot those scenes / sequences, so that you can get away with the lower resolution which is the price of using the higher fps rates, with most consumer level cameras.

It is a good idea to try to keep some distance between your foreground subject, and the background. Such as a person standing with a wall behind them. Try to gain some degree of separation between foreground and background. Don’t place the subject close up against a wall. Ensure the foreground subject is in sharp focus, and allow the background to ‘blur out’. The contrast will reflexively make the foreground subject APPEAR even crisper and clearer than it really is, in comparison to the blurry background.

Zooming in on a subject creates a shallower depth of field, and automatically ‘blurs out’ the background, to your advantage in most cases.

But arrange lighting, or choose the time of day and thus relative positions of the sun Vis a Vis your subject, and their background, to reduce problems due to shadows. You can also soften the light, to soften the shadows, and make them less obvious. Reflector panels or filters are good for this. You stand in a position to reflect the direct sunlight back at the subject being lit by it, from BEHIND or from the side of the subject, so as to cancel out most of the shadow. Introducing a second 'indirect' source of light'. In a similar way to how the moon reflects the 'second hand' light of the sun.

3-Point Lighting

Using 3 light sources lets us control or eliminate the shading and shadows produced by direct lighting, while illuminating the subject as desired.

The standard three-point lighting consists of 3 different light sources. One or more of these may be natural or reflected light.

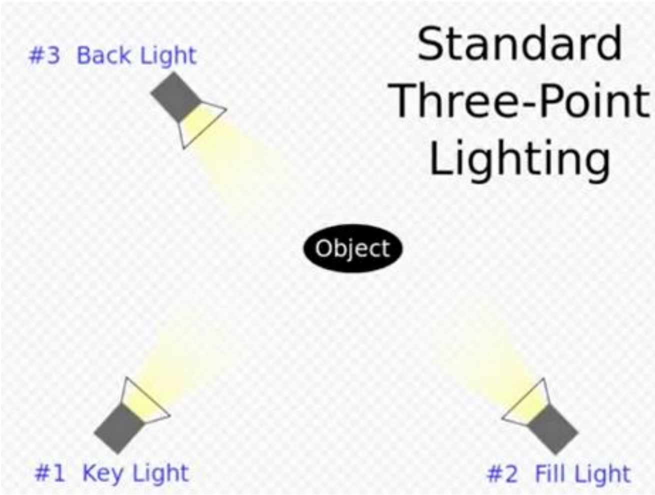
The KEY LIGHT shines directly on the subject, and is the main light illuminating them. Changing the strength, color, and angle of this light has the greatest impact on the overall outcome. This, the main light, will be usually be as natural a white (blue in terms of 'temperature') as possible, to simulate natural sunlight.

Shooting outside, in direct sunlight, the sun can be used as the Key Light. You can position the subject, or calculate the time of day when the sun will be in the most suitable position, Vis a Vis some immovable background, at the most profitable angle to the subject, to illuminate them.

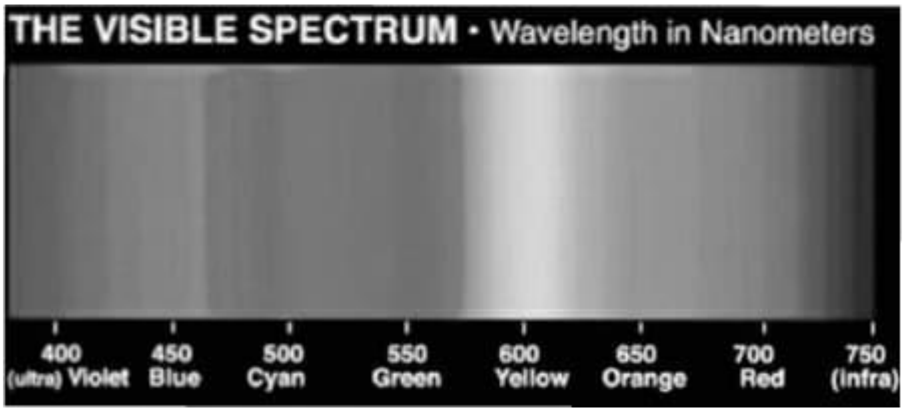
The FILL LIGHT also shines on subject, BUT from a side angle, relative to the KEY light. It is also often set at a lower position, at about the level of the subjects face, or just above eye level. This light's function is to balance the Key Light by illuminating any shadows thrown BY the Key Light, reducing 'Chiaroscuro' effects, such as the shadow cast by the nose on the face. The Fill Light is usually softer, and up to half as bright as the Key Light. Sometimes a reflective surface such as a white wall, or a carefully positioned reflector, reflecting the Key Light back onto the subject from a side angle, performs the role of Fill Light, resulting in a softer, subtler outcome than might have been the case using a separate Fill Light lamp.

Sometimes stark, contrasting, shadows are deliberately intended for artistic / stylistic reasons, in which case the Fill Light is not used.

A third light, the BACK LIGHT, lights up the subject from behind, as shown in the illustration. This eliminates or reduces shadows cast by the other two lights.

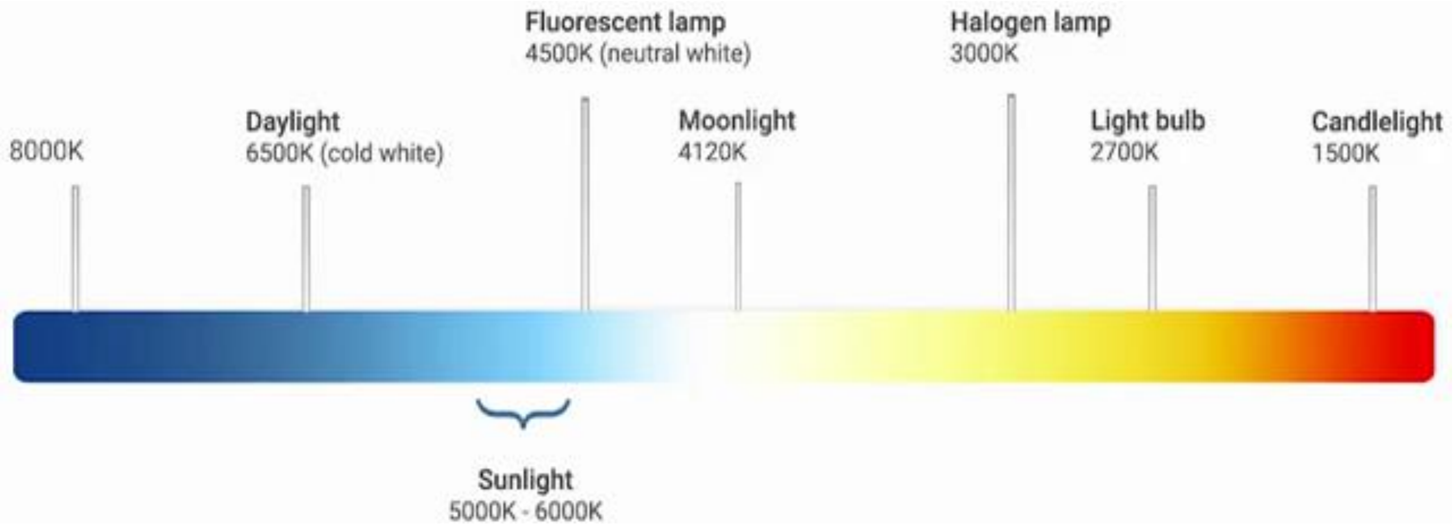


Visible light spectrum wave-lengths



Note that the smaller/shorter the 'wavelength', the higher the frequency. So that part of the electromagnetic spectrum higher in frequency than what we render as 'sound' (with 'wavelengths between a few millimetres, and a few meters) with a 'wavelength' between 400 and 700 NANO-meters, is perceived / rendered as 'light' and 'color'.

Color Temperature Vis a Vis 'Kelvin Values'



We automatically form different associations with different colors. We learn them at a pre-rational age, long before we began forming long term memories. As infants. We associate different colors with warmth, and cold. With heat and passion and danger. And with peace and calm.

Blue is 'felt' to be a 'cold' color. Think of Arctic ice. Cold skin.

Orange represents, by association, inviting warmth. It is felt to be a warm, welcoming, friendly, inviting, cozy color.

Red is a 'signal' color for danger, due to 'the red hot glow of fire' and 'blood'. Blood is only visible after violence, and often death. It has become associated with the emotional intensity of 'life and death' struggles. Thus the presence of this color, like blood, triggers a fight or flight response. A source of fear to some and excitement to others. Wariness and even terror to the prey, and anticipation of a meal, and thus positive excitement, for the predator.

The continuum below places the different 'Kelvin' values with their colors, from highest, coldest, blue, to lowest, warmest, red, and indicates their relationship to the 'naturally occurring' light associated with indirect daylight, direct sunlight, moonlight, and candlelight.

And so **indirect daylight** has a Kelvin value of 6500, which is experienced as 'cold' white. With a 'blue' tint.

Direct sunlight has a Kelvin range between 5000 and 6000K and is slightly blue, approaching 'neutral' white'

Moonlight has a Kelvin value of 4120K.

Whereas **candlelight** has a Kelvin value of 1500K, and is experienced as 'warm' orange.

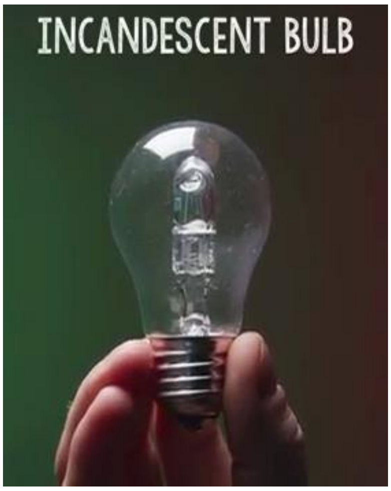
Red hot coals flow a deep bright red. Like fresh blood.

Cheap office lighting of the **fluorescent** kind is 4500K, and 'neutral white'.

A **halogen** lamp at 3000K is more 'yellow' in color.

What was once the 'conventional' light globe, the **incandescent filament** / 'Gluhbirne' type, before energy saving globes like LED's became common, has a Kelvin rating of 2700K, and is 'yellow-orange'.

Of course you can add colored plastic or gel filters over any light source to 'tint' it closer to the desired 'temperature' and 'color'. Or buy pre-tinted/ colored globes.



CRI values indicate how close a light sources comes to replicating 'natural daylight'

Our eyes are adapted to natural daylight, in terms of color perception. Professional lighting can come close to emulating natural daylight. For example a light with a CRI value/rating of 96-99 indicates that the light globe in question more or less reproduces a light comparable to 'natural daylight', across the full range of colors. This is considered the most 'accurate' and 'natural' and 'organic' looking light.

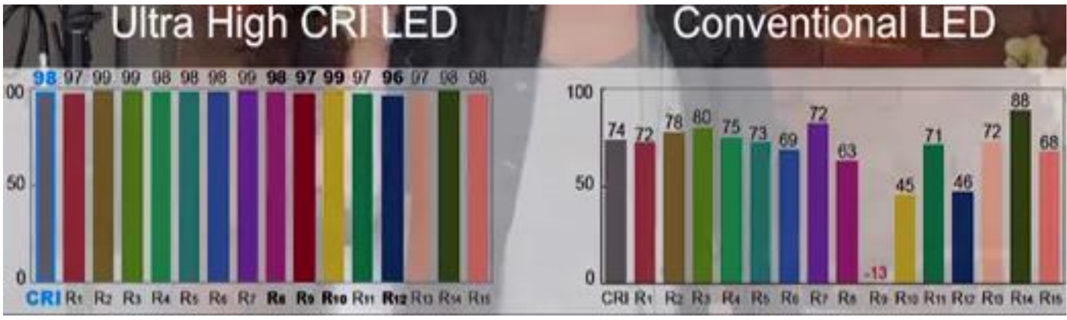
You can use plastic or gel filters to 'improve' cheap lighting, adding a 'tint', to bring the results closer to what you'd get from the more expensive 96-99 CRI rated professional lighting.

Conventional LED lamps have CRI values from 45-88. This CRI value is often stated on the packaging, as in the example below, as 'CRI > 80'. Check the CRI values of any lights, even cheap home bulbs. Even affordable IKEA bulbs offer CRI's over 90, suitable for professional photo shoots, so if bulbs are comparable in price, go for the higher CRI rated bulb.

The higher CRI values you can get the better. Pay a bit more for higher CRI value lights, as they give more natural lighting with whatever sort of lamps you have around the house and are 'conscripting' for your video and photo shoots. And next time you see a table lamp on sale, or at a flea market, you might consider grabbing a few extra lamps, to allow you more flexibility during your shoots, with positioning lights. For little money you can make a big difference. And get great 'marginal returns'. A small marginal cost, for a potentially large marginally gain.

Cheaper globes don't just suffer from low CRI's, they also often suffer from 'flicker'.

LEDs are cheaper, run cooler, and last longer, but often have lower CRI values than conventional globes, so compare the CRI values of the affordable globes next time you go shopping for lights. Also some LEDs and fluorescent lights can 'flicker', so look for 'flicker-free' globes. If you have this problem on a set where you can't change the lighting, experiment with different shutter speeds, to find the best 'match' for the flicker rate/periodicity.



Lighting Vis a Vis optical zoom lenses

You can get a clearer shot using an optical zoom lens. But you may need to improve lighting, or move to a location with better lighting, to take full advantage of your zoom, without paying a price in reduced image quality.

To clarify, using a standard camera zoom lens, you might only be able to manage an f5 aperture (rather than the usual f3.5), when fully zoomed in for Macro shots. So you are able to harvest less of the available light. You will need to increase the ISO, and risk introducing 'noisy' artefacts. So you will need more light, all other things being equal, to get the same image quality.

You might consider getting a Sigma18-35mm zoom lens, which can maintain a 1.8 aperture even zoomed in to the maximum macro shot, allowing you to use a much lower ISO for the same lighting conditions, while maintaining image quality.

Simple lighting solutions

My original aim was to find the best camera that would let me get away with poor lighting, to shoot simple videos at home.

But if you can swing it, buy a **ring/halo light**, and you will give your videos a real step up in quality, no matter what sort of camera you are using. These are the most popular lights for YouTubers and other Vloggers, for filming yourself. This ring of light provides soft lighting from every angle, when the subject is correctly positioned at the center of the halo / ring. This way you get automatic light balance, with the same light source lighting your subject equally from every angle. The only downside is the ring of light that will appear in the subject's eyes. A ring light is what the pros use to create a well-lit environment. Ring lights are very effective and there are affordable options.

A popular solution is the Neewer, 48cm, 55W, 5500K, dimmable, LED Ring Light Kit, which comes with a stand and carrying bag.

An aperture M9 LED light can be powerful enough to light a subject, and small enough to hold in the palm of your hand.

You can use (preferably black) aluminum foil to emulate the 'barn doors' found on film lamps, to 'shape' the light. To move between ambient light, to a more clinical, precise, focused shaft of light, you simply 'open and close the barn doors to allow more or less light to escape from the top and/or bottom, and/or sides.

You can use tinted plastic and gel filters to change the ‘color’ of the light, so it comes closer to ‘natural daylight’ Kelvin values, or for artistic/stylistic effect. This is a cheap alternative to an **RGB LED light**. Either way, you can add a color tint to your shots during filming, rather than in post-production. A particular tint can be more flattering to your subjects, adding a healthy skin-tone and glow, and highlights to hair and eyes.

While software allows us to color-grade and play around with exposure, in post-production, most professionals will aim to get the colors in the actual shot as close to what they have in mind for the film, during shooting, rather than relying on post-production. The less ‘tweaking’ that is necessary during post-production, the better. This is because all processing tends to introduce some form of ‘noise’. Some ‘artefacts’. Such as unnatural color, grainy images, and other forms of ‘distortion’. Aim for the high contrast you want in your film, in your actual shot. Aim for the color profile you want for your final cut, in your original shoot.

Adding a tinted filter to add a colored ‘tint’ to the light

Experiment with different color combinations

Generally the Key light on the subjects face is kept as ‘natural’ as possible. So if your lighting is a bit too direct, focused, harsh, and cold, consider hanging filters from the ceiling, or from stands, between the light source and the subject. Close to the light source. To ‘diffuse’ the light so that it approximates ‘natural indirect daylight’. The ‘sweetest’ light is often just before sunrise, and sunset. The ‘Twilight’. Or the light on an overcast day. Both can be very flattering to the subject. The light is as soft and diffuse as you could wish for. So if you can, plan shoots around these ‘windows’ of opportunity. And make sure your entire crew, and performers, are aware of the time limits, and operate with a sense of urgency, to complete the shoot while this light is present, and ‘the window is open’.

You can also buy professional light diffusers and softeners and reflectors to simulate this sort of indirect lighting. Or improvise your own improvised ‘softener-diffusers’ by hanging 'wax paper' a.k.a 'baking paper' between a light source, and the subject. The further the baking paper is from the lamp/bulb, the softer and more diffuse the light. So change this distance until you get the effect you want. You CAN tape this paper to a metal lamp shade if the bulb does not actually touch it, but take care you don't set it alight, or at least produce smoke which may set off your fire alarms.

This waxy paper was designed for use in high temperatures, for baking, so it shouldn’t prove a fire hazard greater than the usual fire hazards on any shoot, that you should be aware of, and have a plan for dealing with. Always be aware of things that tend to get hot, and which could set fire to anything that comes in contact with them. Never leave such things unattended. Keep an eye on all potential risks on your shoot. The camera operators and actors and models will be concentrating on their jobs, focused on a very narrow stream of incoming impressions. So it is up to you to pay attention to things others might not notice.

You can also hang the filter from the ceiling, or from a mic stand, mop handle, or light stand, placed between the light source and the subject, so it hangs between the subject and the light source. You can do the same when filming with natural light. Covering windows or parts of windows with this filter. Or holding frames covered with the filter between natural light sources, or existing artificial light sources, and the subject being lit and photographed / filmed.

Background lighting and color contrasting for effect

Once you've 'framed' your shot, you are free to place all sorts of lamps with all sorts of colored filters, 'out of shot' and 'out of the frame', hidden behind things, hidden under things, hidden above things. You may have to zoom in a little, to exclude one or more of these lamps from the frame. The 'tighter' the shot, the more 'close-up', the more freedom you have with lamp / light placements. And you may need to move lights between set-ups for different shots of the same scene. But now you are free to use these lamps for effect.

One typical effect is that of using color contrasts to create greater separation between the background, midground, and foreground, by layering contrasting color tints on objects and subjects in the scene. Using red and green filters. So that you group objects by color. And they thus gain separation from the other layers, by virtue of this color contrast. This can add 'depth' to an otherwise 'flat' shoot. The effect can then be exaggerated / amplified in post-production. In fact often the entire effect is done in post-production, with masking of duplicate layers, to add contrasting tints to what will then become the foreground and background, but which, during the shoot, were relatively 'shallow'.

More 'natural' light sources don't need to be hidden, and can remain 'in shot'. Such as lamps with globes and/or tints that reproduce natural daylight. Or which otherwise blend seamlessly into the general ambient lighting that they do not distract in any way, or cast shadows.

'Seems, Madam? Nay, it is! I know not "seems"'. Of course like Hamlet, we all imagine WE all know the 'truth', and have not been fooled by 'appearances'. But in this case, we can create the IMPRESSION and APPEARANCE of depth in a flat shoot. Then exaggerate / amplify this impression in post-production. Because we have 'sown the seeds' with these relatively minor 'tints'.

Many cinematographers also prefer, finding the final production superior, the effect of lights tinted at their source, to tints added in post-production.

Experiment with indirect lighting. Reflecting the light off of colored reflective surfaces, to **diffuse** it.
Or '**shape'** the light. Wrap aluminum foil around cardboard 'barn doors', so you can direct light and limit its 'throw', focusing it on particular objects in the scene, which you can then 'group' into 'layers' which will become 'depths of field', and thus your foreground, midground, and background.

Don't limit yourself to colored plastic film or professional 'gels'. Try different colored, translucent, fabrics. Colored lamp shades. Colored paper. Colored glass bowls, dishes, and cups. Anything you could shine a light through. And thus tint it. Or diffuse it. Add a pattern to it. Focus it.

Avoiding problems with shadows

The easiest solution to problematic shadows is to move your subjects away from walls, and to light them from directly above.

Zarathustra taught us how to avoid 'throwing a shadow' in our own lives. As a metaphor for 'avoiding evil'. Using the analogy / metaphor of a candle, and an object. Move the candle behind, to the side, or in front of an object, and it 'casts a shadow'. Metaphorically. Darkness being 'evil' in the metaphor. But hold the candle of TRUTH directly ABOVE or immediately ON the object (the self), and it throws NO shadow. Thus 'living in Ma'at', in truth and justice and beauty' ensures you 'cast no shadows 'and 'do no evil'. So your soul becomes 'light as a feather' and you can 'ascend' to the 'higher realms of being'. Escaping this 'soul trap'. Releasing your hand from the cookie in the cookie jar that is 'the world of pain', so that you can remove your hand, your self, your soul, FROM this soul trap, the 'cookie jar', which tricks you into suffering, by tempting you, via desire for the 'cookie' (the pleasures of this world) into trapping YOURSELF here.

Even simply keeping all light sources overhead will ensure any shadows fall at your feet, rather than behind you, in front of you, or to your sides. Such shadows are less distracting, and usually quite 'short', due to 'foreshortening'. Which is why, as Ernest Hemingway explained to F.Scott Fitzgerald, feeling inadequate in the penis department, you should always look at yourself in a mirror, to get a better impression of your 'flaccid' 'wedding tackle'. If you look down upon it, it will always APPEAR much smaller from this perspective, than it will appeal to an admirer standing in front or to the side of you. Due to 'foreshortening'. Have I digressed? Well of course the 'terrorists' and 'killer viruses' our Cult of Judah Occupation Governments have us 'shadow boxing' with are all phantoms. While the real killer, the real terrorists, are our own government. Which does not exist to promote OUR interests, OUR 'pursuit of happiness', but rather exists merely to further the Cult of Judah's 3000 year old plan for world domination, and the enslavement of humanity, under its One World Government.

Of course soft shadows can increase the impression of depth, and help separate the foreground from the background via contrast.

A darker background will help the foreground 'stand out' by making it relatively brighter. Thus suggesting 'closer' to the viewer. So dim the background lights. Ensure there is a contrast of brightness between the subject and objects you want to occupy the foreground of your shot, and the objects you wish to remain 'in the background'. To direct the viewers' attention where you wish it. And to enhance, or where necessary, create, a deeper 'depth of field'.

Depth of field and aperture 'f' values

'Depth of field' refers to the distance between the nearest and the most distant objects that are IN focus, in the frame.

A '**Deep**' shot is 'flat'. All the objects are in focus. The foreground and background merge into a single focus plane.

A '**Shallow**' shot is one where only the FOREGROUND is in focus. This is often referred to as 'Bokeh'.

We can control the Depth of field of our shot with **'Aperture' F-stop values**. A **lower f** value produces a **WIDER** and **SHALLOWER** depth of field. While **higher f** values with a smaller aperture producer a **DEEPER** and **FLATTER** depth of field.
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'Shallow depth of field' a.k.a 'Bokeh'

Bokeh is where the background is deliberately 'blurred out' and left 'out of focus. So that the foreground is the only part in focus. Directing all eyes to the subject in the foreground. Lending the image a romantic, dreamy, quality.

I've heard vloggers refer to this as SHALLOW depth of field, but it seems to me it refers to a very DEEP depth of field. Need to clarify for self, and guide.

Not all camera will facilitate a true 'Bokeh' look. Some cameras won't allow anything other than a 'flat' depth of field where everything is in focus, and thus can appear to exist on the same plane. So everything takes the position of 'foreground' and there is little if any separation. Other than that produced, as in 2D paintings representing 3D images, created by perspective.

ISO and depth of field

Naturally bright daylight can overexpose film, or a digital sensor, at even at even the lowest ISO settings available, with a wide open aperture. So sometimes you will need to reduce this aperture, even against your wishes, and thus sacrifice some depth of field, in order to maintain correct exposure. It is just one of the many 'trade-offs' we are often called to make. We need to set priorities. And correctly exposed film / digital sensors will probably take priority over depth of field, in this situation.

Cinematographic camera moves

'Cutting on' and 'following' Action

'Cutting on action' refers to following the action from the appropriate points of view at the appropriate times. You place yourself in the scene. Feel the logic of which character's perspective to adopt at which point in the action. And the logic of when you 'go wide' and when to 'move in close'. When to show the context of the entire scene. When to zoom in on the movement of a hand. When to show a close up of a character's face. To show them speaking or acting. To show their interlocutor's reactions and responses.

You can practise this with even the simplest of 'talking heads' interactions. Interposing shots of the speaker's face, and the face of their interlocutor reacting and responding in turn, with close-up shots of their hands gesticulating, and wide shots showing them in their surroundings, and shots of any audience members, and even, in a live situation, shots including the cameras filming the action, to give a 'sense of place'.

If something catches the speaker's attention, we cut to what it is they have turned to attend to. If it was a person, we show their facial gestures, or if they are doing something, we might zoom in on the action they are performing, such as reaching for a gun, or typing something on a computer keyboard. Then cut to what appears on the computer screen. Then cut to their reaction to it, with the light of the computer screen in their eyes. Then back to the first character observing them, and reacting to their reaction, and the information on the screen.

In 'shooter' scenes, we can cut between close-ups of what they see in their scope. Wide shots showing how far they are from their target. Shots from the victim's point of view, looking out into what looks like an uninhabited landscape. Or busy office tower. Then we zoom into the sniper in the window, or hidden behind the bushes. We can cut to close-ups of the sniper's trigger finger as they 'pull the trigger'. Then a close-up from their perspective of the muzzle flash. We can then even follow the trajectory of the bullet, from the bullets perspective, in slow motion. As it hurtles along its trajectory towards the target. Then cut to a close up of the victim turning towards the sound of the gunshot. Then return to the projectile's perspective, as it suddenly impacts with the target. Then cut to the sudden look of astonishment that appears on the victims face. Then cut to their perspective, as they see the ground looming up towards them, as they fall down, dead.

Chase scenes with a hunter and their prey can be filmed over and over, from many different angels and perspectives. Then edited together, so that we cut between the various perspectives, and angels, and long wide shots, and tight close-up shots, to really build excitement and tension and drama. With our shots we can reveal what the characters cannot themselves see. So the viewer can 'know' what they do not know. Look on with dread fear as the unwitting victim walks right into the trap. Even as the unwitting would be perpetrator is about to be trapped in the web of another who has been secretly hunting THEM. That 'look behind you' moment in every horror film is a great example of this. When the audience 'knows' something the character doesn't. And really wants to LET them know. We cut between the time bomb timer counting down, just as the protagonist walks up the driveway, opening the front door. Maybe the door is attached to a detonator. The audience is enthralled by tension, dreading that turn of the knob, and the fatal explosion. But at the last minute the protagonist realises they have left something in their car, and they turn back to get it. Just as the timer goes off, and the door explodes outward. That moment of hesitate and forgetfulness have just saved our protagonist's life!

We can follow the depressed, drunken, truck driver, hurtling down the road, reaching for a beer, as our hapless hero is walking with their children to the park, blissfully unaware of the threat heading their way, and the potential tragedy awaiting them. We cut between wide long shots showing the truck and the family. Then back to shots of the truck from in front, and behind. The street rushing up to the camera. And from the side, hurtling past another bystander on the street who narrowly misses being hit. Then from the back of the truck, as the lucky pedestrian receded quickly into the distance, perhaps shouting abuse at the truck. The final moment of impact can be shown from the perspective of the victims and driver. Revealing their mutual horror. Then we stay with the victims, and watch the truck continue on its 'career' down the road.

Consider WHOSE point of view the audience is intended to 'enter into' for the shot. A small child will 'experience' this differently to a tall adult. Each will be moving differently. And have a different perspective. And different interests. The pickpocket will be looking for opportunities to steal. The Policeman looking for pickpockets. The men looking for beautiful women. The women noticing how expensive the men's shoes and suits are, and how well-groomed they are. Or enviously spying the other women's fashions and shoes and jewellery. A dog would be sniffing around for food. A cat for an 'escape route'.

You can make the most ordinary scene appear epic and monumental, simply by 'storyboarding' in your mind's eye, the way you are going to shoot it. The various possible camera positions and angles and points of view the camera takes up.

The 'reveal' is key to every scene. You can just maintain a fixed set of camera angles and positions throughout the film. Or you can 'reveal' each scene in its own unique way, to make it a real experience for the viewer. No matter how simple and everyday a scene it is.

You can 'frame' a character in a doorway, or along a long flat surface like a wall, or against a window. You can have your subject standing still, as the camera moves toward them. You might start the shoot in a dark forest, then suddenly step out into a bright clearing. Then pan the camera to 'reveal' your subject. 'Following' some sound that caught the camera's attention. So far adopting the camera's point of view. Then cutting to the subject's face, seen from their antagonist's point of view. With its expressions of terrified desperation. Then cut to what the subject is so terrified of. The antagonist, from the protagonist's point of view.

Think In terms of 'whose point of view is the camera adopting in this shot?' So you can switch between characters points of view, in a logical manner. As the action and script suggest. So the viewer continually 'enters into' the different characters, at the most appropriate time. Seeing what they would be most interested in looking at. At that point. Understanding we can only perceive from one point of view, one perspective, at any given moment. And thus deciding which perspective is the MOST interesting and important to THIS shot at THIS point in the scene.

A 'reveal' is where, rather than just 'showing' something, you first build up curiosity as the viewer is left to wonder what they are going to see, or what they are actually looking at. Teasing the viewer so builds interest and suspense.

'Pulling' Focus

Panning, moving across, or moving towards or away from the subject, while changing the focus, is referred to as 'Pulling' focus. An accessory called a 'Focus puller' can be added to your rig, to allow you do manage this feat. Some cameras have an auto focus, so experiment with this too. You can keep the subject in focus while 'pushing in' or 'pulling out', so that the background appears to 'rush'. If you can swing it, you can get a friend to act as your 'focus puller', so one person can focus, literally, on the focus, while the other focusses on the 'push-in' / 'pull-out' , for a perfect result. Some new mobile phones allow you to 'focus' the camera 'on the fly', so check your camera for this option, and when buying your next phone, check the specs to see if it has it. You can also buy a mechanical 'focus puller' to add to your camera accessories.

Pan

During a pan (unless you are combining it with other moves), the camera remains in a fixed position. All that changes is the direction the lens faces. To ‘pan’ we rotate the camera around its vertical axis.

The result is that the distance between the camera lens and the objects/subjects in the frame CHANGES as we rotate, with those objects/subjects far left and right being the furthest from our lens, and the subjects/ objects directly in front of the camera being the closest to the lens.

So a pan results in a changing focus plane. Unless we ‘pull focus’ while panning. Of course the deeper the field, and the wider the pan, the more dramatic the focus changes will be. A shallow depth of field with a narrow pan won’t result in much change in focus. But a wide pan, with a deep depth of field can produce dramatic changes in focus. So that only one position and object/subject might naturally be ‘in focus’, without a constant change of focus, during the pan.

We can use the ‘out-of-focus’ start of a pan as a ‘transition’, and the move from the start of the pan, where the image is slightly out of focus, to the end of the pan, where our main subject/object is perfectly in focus, as a ‘reveal’.

Sideways dolly

We’ve all seen films about film making where the camera operator sits on a little train, running on little tracks, or a slider. The tracks move from the left of the scene to the right. So when the camera operator is moved along them, the shot slides from side to side, moving horizontally, from left to right, or right to left. The camera remains parallel to the scene, and does not pan. So it is like the viewer is on the train, moving left and right, along the scene.

The movement of the ‘dolly’ is a level, horizontal one. The camera remains parallel with the ground, and moves horizontally, and faces the same direction, during the dolly, unless it is being combined with other shots, where the operator might tilt and pan the camera, and even ‘pull focus’, during the ‘dolly’.

So the viewer feels like a passenger looking out from a train or car, as they pass by a scene. This allows you to show a lot of a scene quickly, to produce a quick, clear, impression. To ‘establish’ a shot.

A simple and effective ‘reveal’ is to start with the camera behind some large, close, object. Then slide out from behind the object, to reveal the scene that was hidden by it. In any case, positioning objects in the foreground, between the camera and the subject, will add a real feeling of depth to any shot, and often ‘parallax’ effects, where the background appears to move at a different speed to the foreground.

You might begin a little behind, or ahead of, the subject, and allow them to ‘pass’ the camera at some point, to be a little ahead or behind you, before following / pacing them again. You can end the shot by slowing and stopping, and allowing them to walk out of the shot.

When attempting this shot with a glidecam, gimbal, or hand-held camera, hold the camera on the side of your body, the lens facing the subject, and walk forwards or backwards, ninja style, rather than trying to film while walking sideways.

Also don’t try to walk too slowly, as this is hard to ‘pull off’. Walking faster usually results in smoother looking footage than attempting to move really slowly. Involuntary / unintended camera movements will be less obvious/noticeable/distracting. And if you film it at a fast fps than the base project playback rate, you can slow it down in post-production, which will smooth out your footage even more.

Attempt to maintain the same distance from the subject, as any ‘push-in’ will exaggerate / amplify and thus draw unwanted attention to any accidental camera movements. The closer you are the more obvious and distracting such unintended camera movements will be. Hanging back a little, and maintaining that distance, can help ‘smooth out’ handheld shots. Changes in the camera location Vis a Vis the subject change the location of that subject in the frame more, the more of the frame that subject fills.

After you’ve taken the sideways dolly shot, consider adding some animated digital zoom to emulate a slight ‘push-in’ over the course of the dolly.

During editing, try to keep dolly shots together. And keep dolly shots moving the same direction, together. It can be jarring and discomforting to a viewer to see push-ins and pull outs and pans and ‘opposite direction’ dolly shots randomly coming between dolly shots. It is often interpreted as a sign of amateurish production values. Unless you do it in a deliberate and artistic way, wanting your viewer to feel discomfort. Zen fashion. To ‘jar’ their senses. To ‘disrupt’ the flow of their thinking /feeling processes. To disconcert them. To disturb their equilibrium and balance. To disorientate them. Such as showing disjointed points of view to simulate a ‘hallucination’ or ‘nightmare’ or ‘LSD trip’.

Parallax curve

While the 'dolly' move follows a flat plane, with the camera facing forwards at all times (unless you are combining moves), in this move the camera shifts position laterally, from left to right and right to left, while keeping the camera lens pointed at the original (first frame) subject/object right up until the last frame of this shot. The result is a ‘rushing’ of the background relative to the main subject/object in the foreground. This subject remains in focus, while the rest of the shot, especially the background, ‘blur’.

Outward curve

Rather than facing the initial subject the entire time, in this shot the camera ‘sweeps’ from one side of the main subject, to the other, as the camera moves from left to right or right to left.

Push-in and Pull-out a.k.a dolly forwards and dolly backwards

Before the introduction of ‘auto-focus’ cameras, this shot was hard to impossible to pull off working alone. It required the help of a ‘focus puller' to adjust the focus as you moved, ensuring the subject remained perfectly focussed over the course of the shot. However now may cameras offer the option of ‘auto-focus’ mode. This allows you to focus on framing the subject, and moving without shaking the camera. The camera ‘pulls focus’ for you, automatically.

We can simulate the traditional ‘dolly’ on rails using anything with wheels, as long as the surface is smooth. This might be a skateboard, or even an office chair, or bicycle. Or it might be more exotic, such as an improvised ‘flying fox’.

You can move in the same or the opposite direction as the subject, if they are moving, during the push-in or pull-out. This can add extra dimension and interest to this shot.

Consider using a ‘wider’ focal length such as a 16mm to 24mm lens.

Consider beginning a push-in or pull-out with some object hanging right in front of the camera (push-in), or just behind the camera (pull-out), so that the camera moves through it, to can add a more dramatic sense of depth and movement to the shot. Even having something vertical between (maybe to the side of the frame) the subject and the camera can help ‘sell’ the idea of depth and movement.

The idea is to have the camera act as a person’s eyes would, in terms of focus, and attention. We can ‘push-in’ to show a hand reaching for a gun, or to register the emotional reaction in an interlocutor’s facial expressions. In a sexual encounter we can focus on what the interactors would normally focus on. For men it might be cleavage, lips, and camel-toes. For women it might be crotches, watches, and shoes. These are the details we would, as observers, attend to. Look for. Focus on. Hone in on. Register. The director can direct the audience’s attention to details they want to. Details which ‘define’ the character or situation. That ‘frame’ the character or situation. Giving it a PARTICULAR meaning. Rather than allowing the audience to come to their own conclusions. To even HAVE to. To make sure they don’t miss the details. Or fail to come to the same conclusions that the director wishes, about the situation, or characters. In the way they used to use ‘black hats’ and ‘black clothing’ to clearly indicate who was ‘the bad guy’. And white to clearly define ‘the good guys’. Today we’ve been trained to have the same sort of conditioned response to a Nazi uniform, as Pavlov had trained his dogs to have to a bell ringing.

We want to draw our audience’s attention to details, and to get them thinking ABOUT these details. Pondering their meaning. Making them significant, BY directing their attention to them. Like Kubrick with his door numbers. And overturned car on the road. (References to the faked moon landing he himself directed, and the fact that he was ‘overturning’ Stephen King’s original story!).

Simply by suggesting something IS meaningful, and to be attended TO, can engender it WITH meaning. Make it SEEM full of meaning, and thus meaning full / meaningful. To direct the audience to EXPECT that it WILL, sooner or later, PROVE meaningful, to the story, or character, as a whole.

Details which our eyes are drawn to in this way can be used to suggest something. To fill in details. To provide unobtrusive ‘backstory’ and ‘exposition’. In the form of a scar, a photograph, a tattoo, a bulge suggesting a weapon, a flinch or nervous tick suggesting fear or other strong emotion, a dog lead suggesting dog ownership, an expensive watch indicating wealth, an impressive set of car keys suggesting ownership of an impressive car and thus wealth and success. And so on. Wedding photos. Photos of children. Photos of holidays. Diplomas on walls. A single detail can speak a thousand words of exposition. Explain something. Provide missing information. Fill in a ‘back-story’. Heighten the audience’s curiosity. Throw a red herring into the mix. Shock the audience. Confuse them. Contradict their expectations or reinforce them. Add some inconsistent detail that adds complexity, and interest, and humanity, to a character that might otherwise appear too one-dimensional. Gain some empathy and sympathy and thus encourage the audience to ‘enter into’ a character’s plight. Maybe challenge some assumptions about them. Win the audience to their side. Or at least make a villain more human, and more interesting.

We might push-in on some ‘hidden’ action the actors on screen are NOT aware of. The card-shark ‘palming’ a card. The assassin slipping poison into the drinks. The predator hiding in the bushes, waiting to pounce on its inspecting victims. The hidden bomb. The drunk driver hurtling down the side road, up ahead, set on a collision course with our protagonist who is blissfully unaware of the change in their fortune that is waiting for them, at the next intersection.

With the push-in, you can rely on auto-focus. Or have someone ‘pull-focus’ for you. Or you can move to the end point of your ‘push’, set the focus, and then move back out. So you begin the shot out of focus, and complete it in focus.

The ‘pull-back’ is often used as a ‘reveal’. To show more of the scene than has, up to that point, been revealed. To place something or someone in a wider context. Possibly a surprising or amusing context, relative to our expectations. We might have been following someone dressed as a gunslinger, and assume we are in for a ‘western’. Then the camera ‘pulls-back’ to reveal a science fiction scene, with a fancy dress party in the year 2200. Or you might start with a long zoom shot of a mountain peak, then pull-back, to where the camera is standing, to reveal the scene which lay between that far off peak, and the camera. And suggest ‘epic’ and ‘monumental’ things are afoot. The mountain peak may be used as a symbol. To suggest something. A climb. An achievement. A challenge. Nature as obstacle. The insignificance of man's puny ambitions, compared to the indifference of nature. A far off goal or objective. The distance and remoteness of that peak suggesting that our characters own ambitions are equally distant and remote.

Often we NEED to 'pull-back' to reveal the action. To see what the subject is reacting to, or interacting with. And where.

You can mimic the physical reactions of a person, such as when someone pulls a gun on them. They would be startled and 'pull-back' automatically. At the same time this lets us 'reveal' the person pulling the gun. Then we might 'push-in' again to emulate the reaction of the victim, whose main focus would BE on that gun. Rather than anything else in the scene. Until some noise distracts them. They look. We see them look. Then we see what has caught their attention. So the camera shot logically follows the 'locus of attention' of the characters on screen. In ways that emulate how the mind would focus their attention on details, even though their eyes 'pick up' the usually field of vision. So that we can 'see' over 120 degrees, but really focus on a single object/subject within that field of vision. Something might move and catch our attention, within our field of vision, but until that happens, we really only 'SEE' what our minds are ATTENDING to at any moment in time. And THAT is what we replicate, by 'pushing in' and 'zooming in' on particular objects and subjects, for a moment at least, before 'pulling back' again to reveal the full picture. In the same way our attention will linger on some details, then return once more to 'the big picture'. Often because something 'outside our main locus of attention' compels us. So while we are lost in focus on our interlocutors beautify eyes, or other body parts, something else DEMANDS our attention, and we reluctantly attend to it.

We can 'follow the action' in a very kinaesthetic way. A very kinetic way. A logical way. That flows with the action. Moves with it. Is active. And 'enters into it'. Becomes part of it. Suggests the movements. So the audience 'feels' it. Empathizing with the movement of the subject/object. So that when the car is hit, the audience cringes sympathetically with it. Feeling the impact.

Film the same action from in front, running backwards with camera facing front of subject, then from behind them, with them turning their head to 'look back' towards you, so you can cut from the first, to the second, at the moment they 'turn their head to look back', so the view the audience sees, which you have edited together logically, following the action itself. Switching between 'leading' and 'following' shots is typical of action sequences and edits.

Film the subject suddenly looking up to the left, then cut to what it is they are looking at, from their point of view (p.o.v). At very least cutting to what THEY are now looking at. This cut should be cued by noises that attract THEIR attention. Watch the famous 'Blade Runner' scene where Harrison Ford looks at the Owl, We see the owl. Then we see the owl look at the girl. Then we cut to the girl, which the owl is looking at. Which Harrison Ford is then shown looking at.

The camera thus leads the audience to 'enter into' each subject in turn, and pique our curiosity. Gains our attention. We enter into different points of view. See things from different perspectives. As if the camera has become the eyes of each subject in turn. We get a fluid, connected, smooth transition between perspectives, which 'flow' into a seamless experience.

We 'follow the action', even if it is simply the action of typing, and reading a screen, and reacting to the information displayed. We have a close up of a face intently scrutinising a computer monitor. Then a close up of the subject's hands typing on the keyboard. Cutting to the text they are typing, in the 'search' mask on the screen. Cut to subject hitting 'enter' key. Cut to screen showing the search results that appears next on the screen. Cutting to the subject's response. It wasn't what they were looking for. Then cut to the screen as the subject corrects a typing error in the 'search mask'. Then showing the search results. Then the subject's reaction to it. Then we cut to a shot of the subject's lap, as their cat jumps up, purring, and demanding affection and attention. Then their mobile phone vibrates. We cut to the reaction OF THE CAT. Then of the subject. Then cut to their fingers operating the phone. And the text message displayed on it. Followed by a knock at the door which prompts them to turn. We cut to shot of them looking over their shoulder at the door. Then back to the phone and the text 'Do NOT answer the door. RUN!!!' Then we cut to the door again, and casual knocking. Then pull back as the subject gets sup from their desk, the cat jumping to the floor, and they rushing out a door marked 'emergency exit only', moving past the camera. We cut to a shot of them exiting the office from the fire escape stairwell. Then from below them on the stairs. Then from behind them down the stairs, as they reach for the exit door, and the shot is flooded with light. Then a shot of them from outside, exiting the building. The door closing. Then opening, with someone apparently in hot pursuit of our protagonist. And so on.

You can have the subject actually walk over the camera, or very close to it, while tilting/panning upwards as they approach, so at the point at which they pass the camera is pointing up at 90 degrees to them, facing them, looking directly up at them from below, or side on if walking past rather than over the camera, then tilting/panning to continue to follow them, keeping the subject is always in the middle of the frame.

Or you can have the subject walk into the camera, so the transition between two shots is the darkness of their clothing, which first approaches the camera, then recedes from the camera as they continue 'through'. We having edited two shots, one of them walking into the camera, and one starting with the camera up against their back.

We can introduce and reveal a situation with close-ups that add interest. We allow a car to pull-up into a close-shot, the camera stationary, as the car fills the frame. Then cut to a close-up of the driver's hand engaging the handbrake. We note the expensive watch. Then the manicured nails on the well-groomed, elegant, hands as the driver removes the keys from the ignition. We cut to a shot from outside, as the driver puts his feet out the door, exposing a pair of expensive, hand-made, shoes. Then the camera remains in place and pans to follow the driver as they walk away from the car, up the path, to an expensive looking, ultra-modern, villa. The further the walker goes, the more is revealed, as the shot widens. We watch them from behind as they knock on the door. Then cut to the inside, as the lovely young woman goes to the door and opens it. Then we cut to the man's expression on seeing her as she opens the door. His reaction written on his face. Then her response. And so on and so forth. You can take the simplest of 'actions' and turn it into compelling viewing. Or at least maintain the audience's interest. Editing up a long walk into a series of brief shots, so we 'get the gist' quickly. There is usually no need to show the entire sequence. Unless you have some artistic purpose. You only have 90 minutes. Every scene should 'count' for something, and move the plot and character arcs forward. See '(Re) Writing the Story of Your Life' for details.

Don't forget to use reflections too. Like any trained security or intelligence operative. You can show something reflected in a mirror, or window pane, or in a puddle, or off any shiny surface.

We can choose to show things the actors are NOT aware of. Or indicate that they ARE aware of them, and actually quite interested in them. Revealing something about THEM. As much as about their environment, and the other actors in the scene.

Great actors can 'speak volumes' with a single 'look', 'expression', or 'gesture'. Give them opportunities to. And capture these on film.

The Jib

Whereas the dolly is a horizontal move, the jib is a vertical move. Up and down. Higher and lower. The camera remains head-on, facing the subject, parallel to it. So it is like the viewer is raised and lowered relative to the scene.

We often see this sort of move as part of a 'reveal'. A typical Hollywood sequence which begins with some mundane, often very close-up shot, but quickly extends to introduce an exciting vista or scene. Think of walking up to the top of a hill, and suddenly having a marvellous vista appear before your eyes. A startling and entrancing landscape. Or following your subject from behind, taking up most of the frame, then suddenly the camera rises up over their shoulders and head, to reveal a bustling city street scene. Or they may be a medieval soldier, and it is a battlefield that is revealed. Or it might be a couple in strange fancy dress costumes, and a carnival that is revealed.

The 'reveal' has been accomplished in style! A style typical of big budget, Hollywood feature film cinematography. The 'reveal' works on the principle of CONTRAST. By beginning with something ordinary looking, and withholding information, the audience becomes curious and interested, and invests in the moment, keen to 'see more', and then they are suddenly rewarded, and the contrast of what comes, compared to what preceded it, enhances and amplifies the wonder of what is revealed. We've ramped up the drama, without adding anything. By simply subtracting something, then re-introducing it, we have a much greater dramatic affect and impact than if we simply 'reveal all' from the very start. Our impressions are sensitive to CHANGE above all else. This is why real directors use real cinematography, where one sequence is broken down into multiple DIFFERENT shots. From different perspectives. Close up. Long range. Medium range. Zoomed in and out. From different angles. With different lenses. From different points of view. Whereas lazy 'C' grade directors 'just shoot the sequence', and hope that somehow the actors, and the story itself, provide the interest and drama.

After the reveal the camera might continue up and over the scene in a flyover, or simply 'cut to' a different perspective. But we have introduced our scene in style. Captured our audience's attention. Earned their further emotional investment in our film.

While the push-in shot moves towards the subject, you may find it easier to film the push-in starting at the subject, and walking backwards, then reversing the clip in post-production. This way you start with your close-up perfectly in focus. Which the audience will see as the end of the push-in.

Dutch angle

This shot begins with the camera at a 45 degree angle to the subject. As the shot pushes-in or pulls-out, the camera is levelled out, so we get a 45 degree 'roll' over the course of the shot.

Tilt

When you lean the camera forwards we change the angle of the camera lens to the ground. Thus the camera lens changes its angle relative to the subject. We don't move the camera's position. We merely 'tilt' the camera, and thus the lens, so the point of focus moves up or down.

You may need to re-focus as your focus point changes depth, and moves forwards or backwards of the focus plane. Or you may choose to keep your original focus point, and allow the rest of the scene to blur out of focus a little, or a lot, for effect.

Try combining a tilt with a push-in or pull-out. So that as you move in or out, your also tilt down or up. You might start with a shot of the sky, tilting right up. Then as you pull-out, you tilt down, until you 'reveal' your subject. And their context. Or start low, with a shot of the ground, or the subjects feet, and as you push-in, you tilt up, to 'reveal' the subject/s. You might then allow them to 'brush past' as you pan to show them passing, then moving off into a crowd, or the scene, while you pedestal up to 'reveal' the wider context of 'the action'.

Pedestal

If you move the camera above or below the eyes of the subject, changing its elevation / height from the ground, you are using a 'pedestal' shot. And manipulating the viewers' perceptions and impressions and thus emotions. The shot informs the viewer how they should feel about someone. How they should perceive them. It suggests a host of assumptions they should make about them. Simply by shooting down at an angle, from above their eye level. Or shooting up at a subject, from below, their eye level. We considered this in our comments on 'The psychological effects of camera angles' earlier.

So the Pedestal combines a vertical / height change in the camera, with a tilting of the camera upwards or downwards. So that the camera is always pointing AT the same point of the subject, and has it in focus, even as it raises or lowers vertically, thanks to the changing tilt of the camera.

Overhead shot

You might begin a pedestal from a subjects feet, and follow them from behind, then allow them to walk off to fill less of the frame, allowing you to reveal more of their surroundings. Then if the subject moving off brings objects between them and the camera, you can continue the pedestal shot up and over the height of the obstacles, so you can continue to track the subject, and keep them in frame. Such as over the heads of other pedestrians on a busy street. As the subject continues walking up/down that street, away from the stationary camera. This is a very common shot. Following low, then following higher, then stopping, allowing the subject to move off and away from the camera, then climbing high to 'follow' the subject from a distance, sometimes zooming into them to 'follow' them once more.

Orbit

Orbiting around your subject, like the earth orbiting the sun, using a tighter focal length and zoomed in lens, produces a 'rushing' of the background relative to the subject, often called the 'parallax effect'. Ensure you have discrete vertical shapes like poles, rather than continuous walls, in the background. This will emphasise the parallax effect, as will using a longer lens, such as a 70mm rather than a typical 35mm lens.

360 degree rotation

The orbit defines an external loop around your subject. The reverse is to have the subject move in a circle around the camera, while the camera follows them, from the center of that circle, keeping the lens parallel and level with the subject during the rotation.

A motorised gimbal can often be programmed to complete a full 360 degree rotation / pan. You can repeat this shot several times, in which you change location. Then edit the shots into one seamless rotation. So it looks like there were several clones of you standing around in a circle. Simply move in the opposite direction that camera is rotating/panning in, so it films you, continues, and then picks you up on the next 'pass'. The camera maintains a fixed position and altitude, so you can overlay layers and mask out the bits of the 'background' that overlap, to allow multiple 'clones' of yourself to appear to be in the same frame, during the one full rotation.

You could place the camera on a playground 'roundabout', set it to spinning, and film yourself. In the same way you could affix the camera to a swing, to get a smooth 'tilt-pedestal' shot. A sweeping arc of footage. You might try to program the tilt of the gimbal to keep the lens parallel to you, the subject, during the 'swoop'. Or have it pan slightly. Experiment. Try and see. You won't know what works till you view the footage, and start editing.

The typical orbit is horizontal, and you move around the subject, remaining level with it. However with use of a gimbal, or good hand-held technique, you can achieve a vertical orbit, moving up and over, and down, and up, a subject. Or orbit the subject at any angle you choose, remembering to 'close' the loop to make it a complete orbit!

When orbiting a subject 360 degree, you can slow down the rotation by having the subject move in the SAME direction as you, just slower. You get a sort of 'slow motion effect'.

Alternatively, to make the rotation appear to 'fast forward' a little, have the subject move in the OPPOSITE direction to the camera.

Following and leading

You can follow a person from behind, or the side, or from in front of them. You can record all three. Then edit the footage. So you can cut between these shots. If the person is being followed, or following someone else, we can film shots from that other person's perspective. Then add shots where both subjects are in the frame. We can time the 'cut to' logically, to allow the viewer to 'enter into' the action. Into the subject's heads. At the appropriate time. We see a close-up of one subject's face intently following the back of another subject, who is in front of them. Then cut to what they are seeing. Then that subject turns their head to look behind. So we cut to that subject's point of view, to see the person following them.

You can 'follow' bullets or arrows in slow motion. From the front as the muzzle flashes, or the archer pulls back the bow. Then from the side to observe the trajectory and flight of the projectile. Then adopt the projectile's point of view, and move the camera as if it is that projectile in flight, heading towards the target. We see the target approach. We view the projectile from the target's point of view. Then as the projectile hits its mark, we cut to a side view of the impact. We could then cut to a 'recoil' shot from the target's point of view, as it is knocked backwards.

So the shots follow the action. Logically. In a satisfying way that makes sense. That is kinetic. That takes us on a ride. By allowing us to 'experience' the action FROM different points of view, at the most appropriate moments. To tell a story. Actively. Where the viewer can 'enter into' the story. Rather than merely show the action to a passive audience, and hope they will somehow emotionally invest in the action. And 'enter into' it.

And don't forget you can shoot from below and above moving subjects/objects. Not just from the side or front or back. So you can shoot someone lowering something from the side of a bridge, to the river. Maybe first start with a close up of them taking something out of the boot of their car and tying some rope around it. Then shoot the thing being lowered from below, as it IS lowered. Then shoot from the perspective OF the thing being lowered. Then shoot from the side to show the person lowering the object, and the object, and the river / boat / ground they are lowering it TO. Then if the subject on top is communicating in any way with a subject below, we can shoot what they do, from their interlocutor's perspective. Then shoot that interlocutor's emotional reaction and body language. You can start a shot with the subjects back to you, shoot them turning to face the camera, then walk into, even through, or past, the camera, then pan to continue filming from behind them, then follow them where they are taking the object just lowered. You might even shoot something from the hill above, through some trees or bushes, suggesting someone is spying on them!

When people are on the phone you can cut between the person speaking, so we get to observe their non-verbal communication as they are speaking, and the person listening, to get their non-verbal responses to what they are hearing.

You could film a tennis match from the sidelines, panning left and right, and sometimes showing both players at the same time. In a film you can then cut to shots from each player's perspective, as they observe the other, and the flight of the ball, and their swing, and contact with the ball. Then cut to close-ups of the serve. The volley shots. Then cut to shots OF the spectators. Then to shots FROM the spectator's perspective, observing the game. Then turning to each other to comment. Then looking back as a player disputes an umpire's decision. Then cut to what that umpire sees. Then cut to a shot OF that umpire.

You can quickly see how 'busy' you can get. How much work you can put into just a few minutes of 'screen time'. In REAL time it can take many hours to record the footage for a few minutes REEL time. But consider that millions of people will benefit, over decades, from that investment. So we are looking at a huge marginal return for relatively little marginal cost, in terms of time.

With material that is not intrinsically interesting, dramatic, or 'action-packed', recording then editing in this way can make it SEEM interesting and full of action. Like adding slow motion for dramatic effect. So you can make a documentary compelling viewing, even when what is being shown, like someone digging, or dusting off a piece of broken pottery, is not intrinsically interesting. Then adding 'dramatic' music completes the transformation. The alchemy. We literally CREATE a SENSE of movement, and significance, and 'flow'. The IMPRESSION that we are observing something interesting. Due to the constant CHANGES of camera angle, perspective, point of view, and even speed and the 'tone' of the music.

Film a person walking down a busy street from the perspective of oncoming pedestrians, or people on the bus. Then change to the protagonist's perspective. Then from the perspective of a coffee drinker at the window facing the street, of a café. Do a long high shot of the entire street from behind the subject. Do a close up of faces as they pass, smiling and admiring our protagonist. And note the satisfied look on their face on receiving such non-verbal compliments. Shoot from the side, from the other side of the street, showing more of the scene. Then shoot from inside an out-of-control car, from the driver's perspective, as they hurtle down the street towards our unsuspecting protagonist. Oblivious to the hazard approaching, they suddenly appear to remember something, or get a phone call, which leads them to suddenly change their direction, so that car hits the sidewalk/pavement at exactly where they WOULD have been, otherwise.

Low follow and lead

You might walk behind a subject for one take, then film the same journey from in front of them in another take. Then two more takes from either side. Adding further takes with tilts and pans and even an orbit.

Then film the same takes with the camera low to the ground, and close to their feet. So the foreground (literally ground) ‘rushes’ by the lens. You can use an upside down gimbal, or hold a Glidecam upside down. And ride a skateboard, or bicycle, or walk or jog as smoothly as you can, to keep up with the subject.

You can start by panning to an approaching subject’s feet. Then pan until they reach your position. Then follow them from behind. Then overtake them and film them from the side. Then from the front. Then have them ‘walk over the camera’. Then pan to watch them walk off into the distance. Compare that to how most lazy budget film directors would storyboard such a scene. And consider the value you’ve just added to what would otherwise be a ‘boring’ shot.

Edit these together and you have your first ‘action’ scene. And shown how creative, ambitious, energetic, patient, camerawork and cinematography, with a basic storyboard breaking down even such simple sequences as a short walk, can bring the ‘alchemy’ to budget video.

Combine shots for a ‘reveal’, starting with the feet, or from the waist down, then tilting the camera, or elevating the camera height, to reveal the rest of the subject. A few people talking, when all you can see is their legs, can peak your curiosity, so that you just ‘have’ to see who it is. Adding tension to something few people would have anticipated COULD hold any potential FOR tension. You build tension, then relieve it. Build curiosity, then satisfy it. You are designing satisfying and rewarding experience engines. Unlike that Yahweh / Annunaki fellow who designed the experience engine WE are experiencing. Where there is little or no relief or satisfaction or reward, and thus participation in this ‘life’ is unprofitable for most. Who would, if not brainwashed, and conditioned, and denied access to the ‘exits’, have gotten up and left years ago, rather than sitting through their ‘lives’, let alone reproduced their roles / characters / situations, and forced even MORE new victims to have to ‘watch’ this crappiest of possible films’ we call ‘life’.

A common and effective reveal is to follow someone from behind, close up on the back of their head and shoulders, and their feet close to the ground, then their entire body, from behind, so we become curious about who they are, what they are, and where they are. Then as they reach the top of their climb, and step into the light, and over the rise, we suddenly reveal a wonderful panorama. Or reveal of some magical scene. Or simply some ordinary, though ‘reel life magical’ street scene at night. Or a school playground. Or carnival. Or factory floor. Or football field. Or war zone.

So far we have revealed the context or location. Now to reveal the person, we might halt, and let them move on, and actively reveal themselves in full length, via the change in perspective. Think of having your face against the back of someone as you walk behind them, then stopping, and allowing them to continue. Suddenly instead of only being able to see the material of their coat, you can see their head and shoulders, then entire body.

If we were zoomed in close, or we need to do at the critical moment of the reveal, for full dramatic impact, is zoom back out, to include the entire scene.

We might follow this with an elevation, and even a ‘flyover’ of the scene’.

We might follow our character as they move into the scene. We might overtake our character, and make our own way (as the camera), through the scene. Or we might stop, as the character walks off into the scene, leaving us behind. The further off they walk, the wider the shot will become, if we keep them in focus as they move off into the distance.

We might elevate the shot as they move off, so we maintain the same position, but add the grandeur of an overhead shot.

To really end up with the footage we would need to really bring our scene to life, we would want to have filmed the same sequence many times from many different angles, points of view, and using many different shots, from close-in to wide-angle.

If we story-board this first in our minds eye, and then draw up a simple storyboard for the sequence of shots, we can save a lot of time and frustration at the filming, and the editing stages. Imagine trying to organise, then edit, a bunch of random clips, with no idea of what you, or the director, was going for!

We might ‘cut to’ another subjects reaction to seeing the character even before WE have seen them. And only THEN cut to a shot of what this new subject is reacting TO. Our original subject. And thus add even more interest. Based on the reaction the second subject has given to what THEY saw.

A great actor can convey a ton of information and expectations. Reveal romantic or sexual interest. Show pity or compassion. Appear captivated, or enthralled. React as if they have just seen something incredibly amusing. Or sad. Or horrific. Shocking. Or show disappointment. Or overwhelming joy. Show respect and admiration. Or fear and a desire to ‘get away as fast as possible’.

All these reactions will be transferrable to the audience, as they ‘enter into’ the current subject’s reactions / affects / emotions. Raising the bar of anticipation and curiosity even further. Before the ultimate ‘reveal’. When we finally get to see who our subject is. What they are.

If we have been following them through some scene, full of props and other characters, we will already have formed some idea of the context that provides most of the prejudices and assumptions we will use to ‘build’ the ‘mystery character’ in our minds. We will have collected a lot of information from the shots we see of how other people are responding and reacting to the character. By the looks on THEIR faces. THEIR body language. And so by the time we see them, for the first time, we really ‘know’ a lot about them already. A lot that was ‘suggested’. Rightly or wrongly. So that we might be satisfied to find our ‘prejudices’ and ‘expectations’ justified. Or shocked out of our complacency, Zen-style, by a contradictory reveal. One that does NOT meet our built-up expectations. This can be used for ‘shock’ value ‘to ‘stun’ the audience with a little thrill of 'I didn't see THAT coming', or for humorous effect, where the tone is comedic.

Think about how YOU can 'reveal' a scene, in a way that stuns and surprises the audience. Who will you 'follow' as THEY stumble upon some famous event or meeting in history, to offer a creative twist that your audience will thrill to?

It might be me, but I love a 'flowing' reveal, with a lot of movement, that we can 'enter into' and 'flow with', like entering a stream or river, or riding a wave. I wrote my first such 'script' in high school. And I still can visualise a lot of it. About a coin. Following it. And hey, I might film that first script. But what you can do is go back and watch all the starts of the films that really put a lot of work into making their 'reveals' as 'moving', literally, as possible. The ones that 'pulled you in' so that you 'entered into' the movement, and felt like you were being taken on a ride. Long before George Lucas turned movies into video games.

Watch great cinematography, and note the camera angels and shots used at each point in your favorite sequence. Then work out how they were achieved. And how YOU can replicate them, with the gear you have. Or gear you might borrow. Work out the physical moves you would need to master, with a mobile phone, or whatever camera you have, to emulate the same 'feel' of the shots. Then practise them. Your new 'camera yoga' exercises will evolve from this evaluation.

Remember that the closer you are to a subject, the more obvious any camera shaking, or change in the position of the subject in the frame, will be to the viewer. So consider leading-following at a slightly further distance, if camera stability is likely to become an issue.

Reverse (in) focus reveal

We start with the camera close up to the subject's face, in perfect focus. Then as we pull-away, we 'pull-focus' so that their face remains in focus, as me move away from them. So that the background moves out of focus.

But imagine reversing this footage during playback, and even speeding it up, so it looks like we have managed to RUSH in towards the subject, and stop just at the very last moment before ramming into them. Now THAT is a 'ride' an audience can 'get on' and 'enter into'.

It will look like a marvellous piece of camera work. Just how did they manage to 'pull focus' so perfectly, and still not 'hit' the subject at the end of their 'push-in'?

This is just one 'sleight of hand' used by 'Zach' to perform apparent 'magic tricks' by taking advantage of perspective, and using masking, and other 'After Effects'.

Now the shot I described might not be what you were expecting. You may have been expecting a shot I cannot bear, and will NEVER use in any shot other than perhaps after a concussion, explosion, removal of eyeglasses, or drug induced distortion of perception being experienced by the subject in the shot.

The 'reveal' from 'out of focus' to 'in focus' is too cheap, and painful, for me to ever inflict on an audience. It should be banned. It is an intolerable abuse of the audience. A 'cheap shot'. Inflicting eye strain and headaches on millions of people for years to come!

Overhead

The camera is positioned above the subject. Often directly above, pointing directly down to the ground, so the lens is parallel with the ground. Or point down at the subject at an angle. Then move sideways, horizontally, relative to the subject. Or fly towards them and then over them. Or pull away from them.

Remember that 'looking down on someone' from an angle can be used to make them look weak, ineffective, and small. Whereas looking directly down on a scene suggests 'overview' and 'angels watching over mere mortals', and can have a desirable 'affect', by prompting such emotional associations.

You might use this shot as part of a reveal, where the shot begins with the camera pointing up at the sky, then slowly tilts downward, to 'reveal' the subject, in a 'vertical pan'.

Low Angle

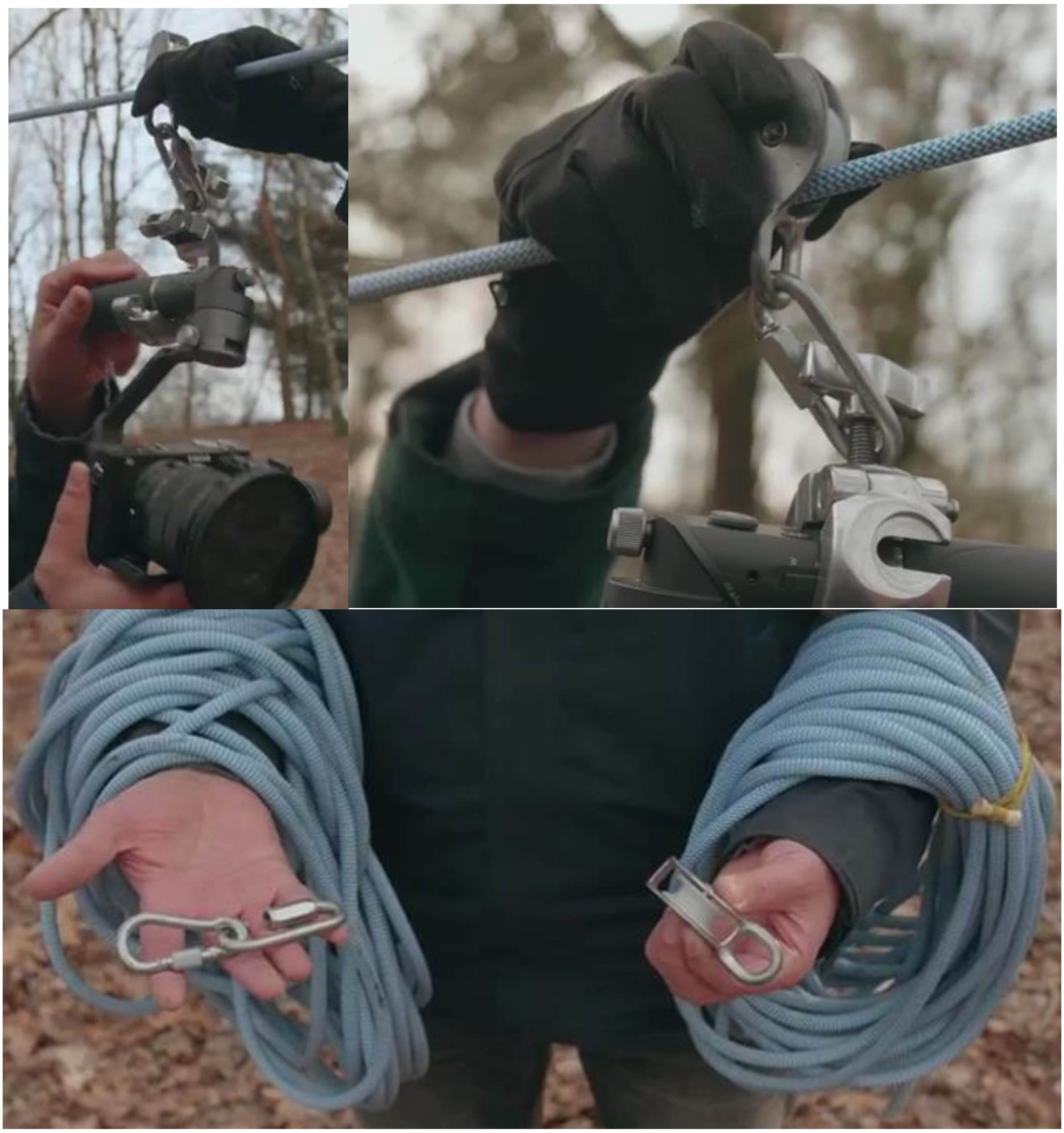
Often filming someone from a low angle, looking up at them, has the effect of making them appear more powerful, dominant, and 'larger than life'. Dictators love to be filmed from low angles. It is the 'heroic' shot. The camera is placed below the subject, and then tilted upwards. This can be part of a reveal that starts with the ground, or the subject's feet. The shot usually stops with the head and shoulders in full focus at the end of this 'vertical pan'.

'Flying fox' a.k.a 'wire cam'

Attach a carabiner to your camera or Gimbal, and attach this to a pulley, as shown in the photos below. Then tie a rope taut between two trees, posts, or other vertical structures. So that now you have a 'flying fox' for your camera to hand from, and glide along. Now you can take smooth 'flying' shots. If the rope is high enough, and 'out of the frame', you can use this method for 'lead' and 'follow' shots. You simply pull the camera along with a line. Or if you can manage a natural slope in the rope, enlist the help of gravity to pull the camera pulley down, and allow it to ‘fall’ in a controlled manner, using a line. Using a remote or programmed set of moves, you can then add pans and tilts to the shot, as the camera moves along the flying fox. Placing vertical objects, such as trees, telegraph poles, fence posts, or a railing with vertical bars, between the camera lens and subject will add depth of field, and a sense of speed to the shot. You could film someone running down a forested hill, and keep up pace with them. Or follow sometimes, and lead others, to vary the shot, as long as you can pan by remote, or calculate the shot and program the gimbal to pan at when the camera gets out in front of, or moves behind, the moving subject. Or simply maintain the same speed.

You can use an ‘abseil’ to send your camera up and down, vertically, following a subject climbing a tree, or fence, or wall, or even cliff face. Or falling down a waterfall. Or jumping off a bridge.

To create the illusion that your camera is attached to a paper aeroplane, or model, stick it to the camera, then YOU fly the camera around, with the paper aeroplane sticking out from below the camera, and in the frame. You them emulate the flight of a paper aeroplane.



Cheap thrills

Think of things you can film THROUGH, to add your own original ‘color correction’ and ‘color direction’ and ‘look’. Hold something opaque/translucent, in front of part of the lens, such as a crystal prism, glass bottle, coloured plastic, or see-through / sheer fabric, to add an overlay of texture and light distortion/sparkle to all or part of your shot.

You can also shoot through windows of buildings, or cars, or the helmets of motorcyclists, or through door peepholes, or binoculars, or telescopes, or manholes, or cracks in walls, or partly open doors or curtains.

Real-time and post-production parallax effects

Shooting with a telephoto or similar ‘longer’ lens can produce a ‘parallax’ effect where the background appears to ‘rush’, to recede, advance, pan, or spin, much faster than the subject in the foreground, as the camera pushes in, pulls out, pans, or orbits the subject.

Position the subject or camera so place a vertical, discrete object in the foreground between the camera and the subject can make the subject the middle ground, and add even more ‘depth’ and ‘drama’ to the shot.

You can ‘fake’ this effect by duplicating a clip, then masking out the background from the copy, leaving only the subject. With this copy as the top layer, it becomes the foreground of the shot. We then animate a zoom by ‘scaling up’ both layers. Only we scale up the background layer slightly more. To replicate the parallax effect resulting when we push-in with a ‘longer’ lens. So the background, lower, layer, appears to ‘rush’ slightly relative / compared to the foreground. Or we can animate a ‘panning’ of both layers, but emphasise / exaggerate / amplify the pan of the background, lower, layer, so it pans further / faster than the foreground, upper, layer. In both cases we make the background ‘grow’ or ‘move’ faster and further/larger than the foreground layer, so they appear to change at different rates and magnitudes.

To ‘pull off’ this deception, we first ‘scale up’ the isolated subject, foreground, upper layer, so that it ALWAYS masks itself in the original. Or if we use ‘Content Aware Fill’ or the ‘Clone Stamp Tool’ to remove the subject from the background, we can skip this step, as the subject won’t be visible in the background/lower layer.

A dramatic and interesting variation is to ‘Scale up’ the foreground subject over time, so it appears to ‘grow’, while leaving the background unchanged, so the background appears to ‘rush backwards’ slightly, as the subject appears to move towards the viewer. This emulates the parallax effect of ‘pulling focus’ while moving in towards a subject.

Enabling ‘3-D’ for the layers gives us the option of pushing the background layer deeper into the background, or pulling the foreground closer to the viewer, to add even more depth to the footage, with the Blue-Z (Bluez) arrow, or third value of ‘Position’. We cover the process in detail elsewhere in this guide.

Viewing a series of static shots as hyperlapse video

Try using a wide angle lens for more dramatic results. Find three features you can use to ‘track’ your shots.

Find three points that will be visible for the duration of your ‘push in’ or ‘pull out’ or ‘orbit’, so you never lose sight of them.

Think in terms of ‘triangulation’. You use one feature as the point of focus. Another for the horizontal position in the frame. The other for the vertical position in the frame.

If you keep the two in the same position in each frame, and the other in focus, you will get a smoother transition between each still frame.

The top of some vertical structure, or some other fixed, obvious feature, can make an ideal focus point. Then find one clear feature on the vertical plane of this structure, and one clear feature on the horizontal plane of this structure.

Keep these features in focus, and in the same vertical and horizontal position in the frame of each shot.

Use a camera level if you have one, to ensure the camera is always horizontally level.

Experiment with moving a few steps towards the subject. Then try the same in reverse. Also try orbiting the subject. See what works best.

You will need one still shot for each frame. So if your base project playback rate is 24fps, 24 frames, and thus 24 still shots, will be played back per second. So plan ahead. How large do you want the ‘gaps’ between each shot to be? How much ‘change’ do you want between each frame?

If you want a steady, smooth, continual, fluid hyperlapse, then take shots at regular distances. Say every 5 steps. In whichever direction you are moving. You might count the number of steps it will take to cover the distance, and then divide it by how many shots you want to divide that transition into. Which brings us to the very artistically important topic of transitions itself.

You can then use ‘Warp Stabilizer’ or ‘Motion Tracking’ software to further stabilise the footage. Select two tracking points on the same horizontal and/or vertical line for the software to ‘track’ to.

You can then add ‘Motion Blur’ to simulate the illusion of fast motion between each frame, if that is the ‘look’ you are going for.

Montage

A common way to ‘speed up’ the action is to use a montage. Action films use this a lot. Showing the hero preparing for the coming fight scene. Like Rocky training for the prize fight. Or ‘The A team’ setting up the gear for their next assignment. Or any other protagonist’s ‘road to glory’, maybe showing them studying, graduating with honours, being showered with awards, getting their first job, and ending with them in their office, hard at work, as the action proper begins, with the arrival of their first client. Which is where OUR story proper begins.

You might get very ZEN and Buddhist / Schopenhauer’s and ‘collapse’ time horizontally so it becomes vertical, basically speeding it up, so that we remove time from the equation. Showing the ‘blissfully happy couple’ at the proposal, then wedding, then honeymoon, then first fights, then divorce, and leave them seething with hatred and resentment for each other, all in a few moments. Revealing the truth about 'love' and 'hate' and all emotions in general. The short story 'Siddhartha' does this, at the end of 'Der Steppenwolf'. Artistically representing the 'pessimism' at the heart of most non-Cult of Judah 'religion' and 'philosophy'. For even if you continue the 'series' and show continual birth-death-birth-death-birth-death, the content of most of the 'interregios' between each birth and death will be suffering, misery, loneliness, desperation, and 'a war of all against all'.

If you evolve further, using my 'Optimal Ethics Generator' 'Ascension Device' – 'Liberation Engine', then you could show an evolution, in which, over multiple lives, the 'suffering' generates wisdom, and an evolution of the will, so that soon the lives led are fun, rewarding, satisfying, games, rather than struggles for domination and exploitation, so that as we cycle, in place (time being vertical, and thus has no 'extension' or even duration, merely the eternal moment of NOW), our characters evolve into playful beings, engaged with joyful spirits, in the game of life!

In my 'Theatre of the Absurd' drama piece, I might run through the entire action once, at normal pace. Then repeat it a few times at normal pace. Then start playing it 'fast forward'. Then finally reducing the 'action' to a montage, that continues ad-infinitum, as we see more and more of the audience finally 'get up and leave', until finally the theatre is empty, apart from the actors, who are 'stuck' playing their roles. Unlike Rosencrantz and Guildenstern, they are doomed to continue 'acting out'. The coin toss never falls. They are stuck in limbo. In this 'theatre of the absurd' we call 'life'.

Transitions

As equally important as the actual '**reveals'** and '**shots'** are the **transitions** between each shot. When you 'cut to' the next shot. How you do this can make a huge artistic difference, and add real value to the viewer's experience, while maintaining a logical 'flow' and fluidity to the sequences.

Watch your favorite movies and television shows to see how they deal with transitions. They can really add excitement and movement, and be very satisfying to watch.

At the end of one scene, the camera might move in close to an object or subject until the frame is full of just one color, and the next shot might begin with a close-up where that same color fills the frame. After which it 'pulls back' to 'reveal' the scene. In this example a **color** is used as the transition element. The element of continuity between each shot.

Or try a '**whip**', where **motion blur** is used as the transition element. You finish one shot, then gently push/tap the side of the camera slightly so it spins 90 degrees or so. At the start of the next shot your rotate the camera about 90 degrees away from your subject, then tap the side of the camera, so it spins, in the same direction as before, to finish up facing the new subject. The aim is to add motion blur to the end and start of each shot. The eye won't be able to 'make out' the transition' between the two clips. When you edit the two clips together, it will look like you spun the camera slightly, and managed to have that spin stop facing the new subject. Even though the new subject may be in a totally different location, and totally unrelated scene, it will feel seamless.

You can use the same method to 'cut to' another subject in the same scene, as if you simply panned the camera fast. You might be adopting the point of view of the original subject, following their gaze as their attention is drawn something. Such as a startling sound they feel compelled to discover. They turn towards it. They see a new subject. You can then adopt that subject's point of view / perspective, looking back at the first subject, from a very different, new, interesting, angle. The new subject might be way off in the distance, so we pan to them, then zoom in / push-in to see them more closely, and maybe they are looking through binoculars, and we cut to what they are seeing, through them. Namely our original subject, who we can now watch from a distance. Adding movement. Adding drama. Adding interest. Adding value. Adding to our audience's viewing pleasure. Taking something that could have been boring, and making it interesting. Taking everyday 'action' and giving it some 'epic' 'grandeur'. Glamour. Drama. Artistic value. Aesthetic value.

Each movie or television series tends to have its own 'signature' transitions. Or transition elements that repeat in each episode, or over the course of a movie. They add to its 'look'. And 'feel'. And 'tone'.

You can hold your gimbal or glidecam over your shoulder like a fishing rod, so the lens faces the sky, and then 'cast' it, bringing it over your shoulder, so the shot moves from sky to subject.

Or do the reverse 'reveal', starting with the camera facing the ground, and moving in an arc upwards, until the subject fills the frame.

You might zoom into some object at the end of one scene, then begin the next scene with a close up of the same, or a similar, object. It can be similar in different ways. Appearance. Color. Size. Shape. Or function and purpose. The object might suggest something. Acting as a metaphor. Or as a link between scenes. Or as a trigger for some reflection that adds meaning to the scene, and propels the action and character arc forwards. Adding value. The object could be associated with the character. Or signal a change in the character. Even forebode some fate for them. Some change in their fortune or circumstances. Or signal something. It could be ironic, or humorous, or surprise the audience.

You might 'fly into' or 'through' something, such as a dark tunnel, a rose bush, some leafy tree branches, or a crowd at a party or concert, and use that journey as the transition. On the other side the new scene is revealed.

You might pan to some element of the scenery, and then merge the scenery of the next scene with that scenery. Adding a blur. Or layering and fading both scenes, so as one scene fades out, the other fades in. Similar scenery or similar colors and shapes and textures can make this a pleasant, satisfying, smooth, fluid, transition.

A large vertical object makes for a perfect transition. You pan so the object fills the frame for one frame, then reveals the next scene as you move past it. Gradually. So you get a smooth, fluid, satisfying, agreeable transition between the two very different scenes.

You might end a scene with a 'freeze frame' of the last frame, which fades to reveal the next, totally unrelated scene, which is also 'frozen' on the first frame. Once we've had a chance to get a quick look at the new scene, it can 'continue'. Often this is accompanied with the shows 'signature' theme music. So this sort of transition between scenes becomes 'familiar' and 'known' to the audience. A 'signature' transition people associate with the television series.

We could add some sort of dynamic animation to this last frame, so it 'fades while spinning and shrinking'. Or the camera zooms into it really tight, as it fades, revealing the next scene. Or the next scene 'grows' from the center, as it fades in, and spins, to finish filling the frame. Before the frozen frame begins once more to 'play'.

Often '**B roll' footage** is used to 'transition' between scenes. Footage from the general location. Based on the location, situation, tone, and theme of the film / show / t.v series. So it might be scenes from the beach or boardwalk or hotel swimming pool, full of sexy bikini clad girls, for a Miami based show. Or scenes of New York life, with snazzy or interestingly dressed city denizens for a sit-com set in that city. 'The Office' used shots of drab, dreary, boring, offices, with bored office workers going through their routines.

You can end one scene with your subject knocking on a door. Then start the next scene with someone opening a door, to someone or something entirely different, in an unrelated scene.

Or what if two characters in two unrelated scenes just happen to be gazing out their windows at the same scenery. So we can show their point of view to end one scene, and begin the next scene from the next characters, same, point of view. Imagine the contrast you could set up. Two very different people in entirely different circumstances. With entirely different luck. Different lives. Different fates awaiting them. One is about to be killed. The other about to fall in love. One is desperately poor. The other obscenely rich. One is about to hang themselves. The other about to enjoy a surprise birthday party from colleagues.

A clean cut of both audio and visual content at the end of one scene, followed by the abrupt start of the next scene is one way of handling 'transitions'. In this case there is no 'bridge' as such. Just two discrete scenes.

But there are many exciting, interesting, captivating, intriguing, attention grabbing and sustaining, artistic, creative, and aesthetically pleasing alternatives which do 'bridge' scenes into a more fluid, continuous, seamless, whole.

If we treat audio and visual content separately, even more options open up to us than if we limit ourselves to perfect synchronization. Such as using the audio from the previous, or next, scene, to overlap with the visual content of the current, or next, scene. Bridging the two scenes. So we set up interest in the next scene. And form a seamless continuity between the scenes, acoustically.

The simplest bridge might be to drag one clip end over the start of the next clip, and adding a visual fade-out and a fade in, to soften the transition between the two clips.

We can do the same with audio, fading out one soundtrack as the other fades-in, to achieve a smooth, fluid, pleasing, transition.

Or we can use a '**J-cut'** and/or '**L-cut'** to bridge visuals acoustically. In a '**J-cut'** the audio from the next scene either plays over the end of the current scene. In an '**L-cut'** or the audio of the current scene continues over the start of the next scene.

We can use actual audio from the appropriate of the two clips, or overdub '**Foley**' audio we have recorded 'in situ', or imported from a sound library.

Keep in mind the power of audio to 'suggest' context. You might film a big-city-lawyer's-office scene in your spare room. But if you add real life sounds from a big city office, this will suggest that on the other side of your bedroom door is a bustling big-city legal firm, and just outside the window the hustle and bustle of big city life is in full swing.

If you add '**B-roll' footage** of an actual big-city-lawyer's-office, and a busy city street, as transitions, you can add to this illusion. You can shoot this yourself, or import 'library' footage. You might not have a helicopter to film a flyover of the city your film is set in. But probably someone else has filmed this, and you can buy it, for much less than it would have cost to film yourself. That said, if you get access to a drone, and permission to fly it over the location you require (remember huge fines result from failing to gain official permits for drones in many public areas), you can shoot this B-roll yourself.

At 24 frames per second, the above isn't perceived. What the viewer will 'see' is a smooth transition between the right scene, the tree, and the left scene. The tree, or whatever vertical object you choose, can belong to either scene. You then mask both clips / frames, so that as the camera pans left, over the object, and continues left, the next frame /scene is revealed.

A popular transition is to have someone reach to open a door, even to answer a knock at that door, and then cut to another door being opened, in a different scene, by someone else. This can be funny, using a juxtaposition of scenes whereby what we were expecting, and what is revealed, are ironic or otherwise amusing.

A lift door can be used in the same way. We watch one group enter a lift. Then cut to another group exiting a lift. Possibly with the locations very different. The first group entering the lift of an office building in New York, and the second group exiting a lift of a luxury hotel resort in Bali.

The simplest transition is a close-up zoom into some object, or the back of a character, to end one scene, with a close up of the same color-texture at the start of the next scene, with then zooms back out to 'reveal' the next scene. So that the color-texture is the element binding both scenes together.

Another is to pan down to the ground at the end of one scene, then begin the next scene FROM the ground, panning back up. Or ending one scene by panning up towards the sky, then starting the next scene panned up towards the sky, and panning back down. Or panning left to a forest, until it fills the screen at the end of one scene, and starting with forest again in the next scene, and continuing to pan to reveal the action.

Directors often develop their own style and 'look' for transitions. At least for a television series or set of feature film sequels and prequels. You can often 'tell' what television series you are 'in' by the style of transition. Sometimes they even include the theme music. With the action ending the last scene 'frozen' for a few moments, as the music plays, before 'resolving' to the next scene with a fade-out and fade-in, or even some form of 'transition' animation. Windows 'Movie Maker' offers a few 'transitions' of this type. But you can design your own. Then apply them to every transition in a similar manner. To produce your own definitive 'tone' and 'feel' and 'look', to make all your own work clearly identifiable and recognisable. Something people come to associate with YOUR work. Setting YOU on the road to becoming a 'star' director. Or editor.

Color design

Shooting in the RAW

You've probably heard stories of big Hollywood starlets who refused to do nude scenes unless EVERYONE on set also worked in the nude? Well this is something quite different.

Audio engineers will be familiar with the idea of 'flat frequency response' when it comes to microphones, and recording audio.

RAW is the video equivalent. This recording mode captures the most data possible. So that you have the most data to work with, during post-production.

The RAW footage can look inferior to someone who does not understand its function. Your camera probably has a '**Neutral picture style'** setting of some sort. What this means is that the usual 'filters' and 'contrast' and 'sharpness' defaults are not used.

An analogy might be made between listening to music on headphones or speakers with an automatic 'bass boost', and listening through 'monitor style reference speakers / headphones', with their flat frequency response.

The RAW footage / data offers much greater opportunities for color design, improvement in contrast and image sharpness, and color correction, in post-production. Because it contains more data. More information.

The analogy between EQ and Color Correction can be made here. You cannot boost a frequency that was not present in the recording (though audio engineers sometimes add 'noise' at that frequency to attempt this, with some degree of success). And if you 'miss' some visual data, such as brightness or contrast or color saturation, you cannot even boost it. And where it is present, but weak, boosting it can introduce undesirable visual artefacts / 'noise', just as it can in audio.

When recording with a microphone or camera mode that does not have a 'flat' frequency response, or is not 'RAW', you are carrying out what we call 'destructive editing'. This action is irreversible. You cannot 'undo' it. Because you are failing to capture, or 'colouring' / 'distorting' the actual image / audio that was present. Most digital editing or distorting or 'colouring', such as EQ or color correction, and other effects, are reversible. You simply click on 'Undo' to get back to where you started. No harm done. You can 'try and see'. Unlike evolution, there are no victims. The negative selection process of digital processing does not require anything to suffer. The 'misses' don't have to die. You can 'reverse' decisions. Then accumulate all the 'hits'. Evolution, like medical professionals, gets to 'bury' its mistakes, and appear a lot more competent and 'intelligent' as 'designers', than they really are.

So consider using RAW modes. Neutral modes. For video. As you would for recording music with microphones with a flat frequency response.

That said, many film directors have a favorite combination of film, camera type, and camera settings. Just as many music producers have a favorite microphone and pre-amp. They feel they can save time by 'pre-EQ'ing and 'pre-color designing', even though they are, essentially, LIMITING their options for creative choices later. I guess they are able to 'commit' to a sound or look in advance. And happy with the previous outcomes. Thus willing to take 'destructive' and 'irreversible' creative decisions at the very start of the 'signal chain'.

These people have lots of experience to draw on. You might not have. So in most cases, keeping the option open of

CHANGING something might be a good idea. So you can then A/B the non-destructive changes you have just made, with the original. And CHANGE back. And then ‘try and see’ a whole load of different possibilities. While you accumulate experience. Which later can give you the confidence to ‘commit’ to things from the outset. Because you can predict the outcomes. Based ON that accumulated experience.

Log

Many film directors will know what they want from the get-go, and use a particular combination of analog film and cameras, to get a particular look. Just as some audio engineers will reach for a favorite microphone and use it with a particular pre-amp, and compressor.

However what both have done is ‘destructive’ in the sense that they have added ‘color’ to the images and audio. They have ‘distorted’ the original information. They have limited their choices later. By ‘removing’ some information. By ‘distorting’ it. By ‘coloring’ it. And though they may be able to make a lot of changes in ‘post-production’ and ‘during mix down’, they still have risked losing valuable information which is often very hard, sometimes even impossible, to ‘re-add’.

So many audio engineers will opt to use microphones and pre-amps with a ‘**flat frequency response’**. The original recording might not sound as ‘warm’ as their favorite microphone and pre-amp combination would have produced. But they can be confident of having captured all the information available. Pristine audio. Nothing lost. They then have perfect freedom and unlimited options in mix-down, for adding ‘warmth’ and EQ and compression.

The film equivalent of a ‘flat frequency response’ is called ‘**Log**’. Such as ‘**Log3**’. This ‘raw’ footage often looks inferior to footage already ‘processed’ by various filters built into conventional camera film and lens set-ups, however it is superior in terms of containing more information. Information that can, in post-production, be manipulated in any way the color designer, in collaboration with the director, wishes.

The digital sensor records a much wider range of colors. Remember that all impressions are produced by resonances / vibrations in some medium. In the case of sound it is compression and expansion pulses in the air. With light it is the purer electro-magnetic ‘aether’ itself that is the medium. We are dealing with vibration / frequencies / resonances of different bandwidths. Our ears are ‘attuned’ to receive such vibrations in the frequency range of around 20Hz to 20,000 Hz. Our eyes are attuned to receive much higher frequency bandwidths. Recording in Log allows you to sample more of the frequencies in this ‘visible’ bandwidth, just as recording audio with a small diaphragm, flat frequency response, condenser microphone lets you accurately, with minimal distortion, capture and record all the frequencies in the ‘audible’ bandwidth / spectrum.

This means you miss nothing. And have the maximum data to work with. You every frequency to work with. You can boost and attenuate (cut) with greater freedom and flexibility. And achieve exactly the colors you desire. Whereas if you record a ‘colored’ signal from the start, many frequencies will be ‘missing’. You cannot boost what is NOT there. You might try to ‘cheat’ by adding ‘noise’ at that frequency, but that will introduce its own artefacts which you might not find pleasing.

Using s 'flat' profile such as a Panasonic G7 with Cine-D, gives a 'yucky' INITIAL result. However the greater contrast, and other ‘information’, offers greater scope for color grading and correction in post-production. So you end up with a superior final result.

Color correction Vs Color Grading

Grading has a big impact on the ‘tone’ and 'feel' of a film. Color Correction is the more technical process of balancing and matching whereas grading is a more artistic / creative process. Ideally will have lit scene with this in mind, so you are enhancing/perfecting rather than 'fixing' it in post.

Color Grading

Famous directors often have their own 'signature' color grading ‘look’. This can take years to evolve. You will need to train your eyes to see color more accurately. Hollywood films all seem to have a teal-orange color grading. So start attending to the ‘color design’ of your favorite films. Look for the ‘stamp’ of your favorite director. It might be the type of analog film they choose to use for a film. Or the actual cameras. Do a little research. DVD’s often offer additional commentaries and background.

Then expand your research, and look for more general patterns in the Hollywood blockbusters. In the same genre as you intend working. And then more generally. Learn the 'high end film' patterns.

You will find some general ‘rules of thumb’ that you can use as starting points in developing your own ‘look’. That will put your own ‘mark’ or ‘s tamp’ upon your films. So that viewers will instantly ‘recognise’ it. Even if they don’t realise this. And will be ‘put in the right frame of mind’ instantly, as soon as the’ film’ begins ‘rolling’.

Dark blues tend to be depressing. Warmer orange tones tend to be happier. It is common to add ‘cold blues’ to ‘shadows’, and warm oranges to ‘highlights’. These terms actually appear in the various color correction and color grading software, so play around with them, using your eyes as the ‘reference’, rather than ‘technical guides’ which might ‘explain’ things in scientific terms, but not add to you ‘artistic’ ability much.

Mistakes to avoid

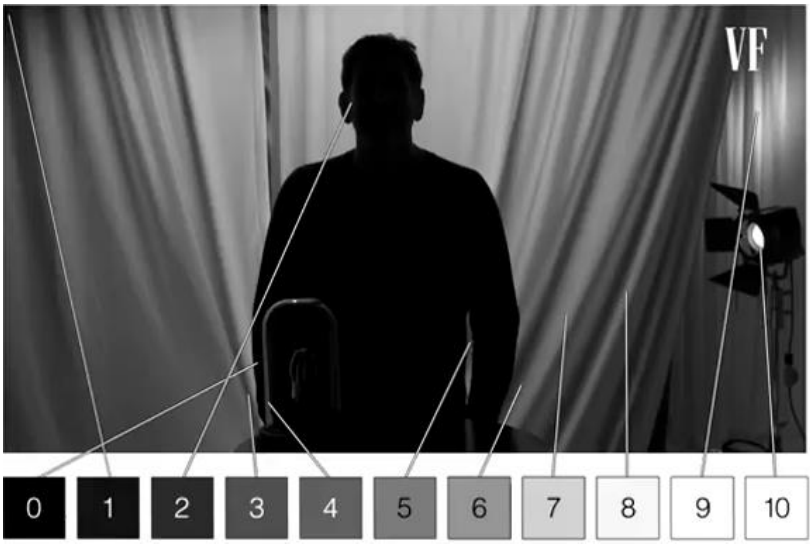
Footage that is badly exposed. Nail the exposure. So that your starting point is good. Don't choose weird colors. Choose Teal/blue for shadows, as this combination works naturally with skin tones, and automatically looks natural. Don't go overboard with LUT's, instead 'dial them down'. And always assume you will need to color correct, even if you are using a LUT. Work on color contrast and saturation before you add the LUT. The 3 way color wheels in Lumetri in Adobe After effects is a good place to do this, rather than using Curves. Ensure all clips in one sequence look similar. This will mean, as a rule, using the same LUT, and then color correcting so they all look the same. Scopes offer a more scientific way of seeing colors and contrast, whereas the eyes can trick you into thinking they are the same, when they are not. The graph does not lie. Your eyes, however, can deceive you.

Using Color contrast to add separation, depth, and mood.

A black subject / foreground against a white background, produces a ‘**silhouette’** which is the most extreme use of **contrast**.

Some colorists divide the black-white spectrum in this context into 11 'steps' or 'shades' or 'tones' from pure black to pure white.

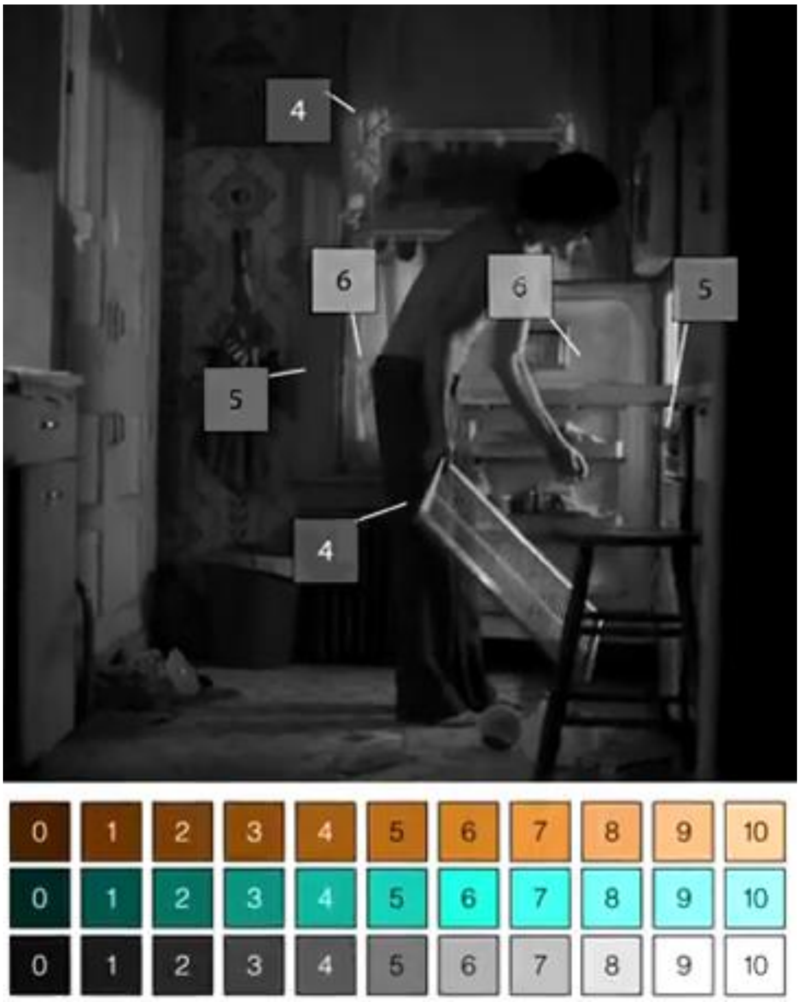
Adopting such a scheme can allow you to create a sense of depth through light, shadow, and darkness.



The same principle can be used to create a feeling of depth using the same tonal range, but different colors. As in the 2019 film ‘Joker’. Where blue is added to those elements the director wished to make the foreground, and orange was added to separate other elements to form the background. The original footage was relatively ‘flat’, with a range of just 4-6 tones. Orange and blue-greens were added to produce contrast, and thus greater depth. The (70’s era) external street lights (yellow-orange sodium vapor with a ‘green spike’), seen through the window at the back of the room, and the room lights made up of the (fluorescent cyan blue) kitchen and fridge light in the middle and foreground of the room, were used to produce a sense of separation between foreground and background elements.

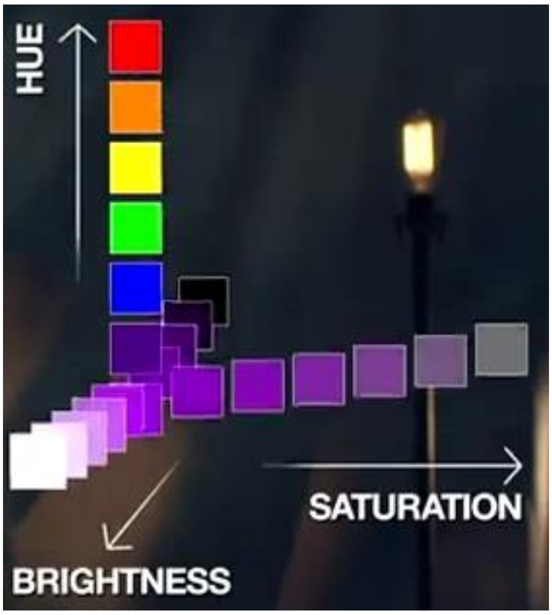
Natural color contrast during the magic 15-20 minute window just after sunset...world bathed in ambient blue light that is so balanced that it perfectly contrasts with ‘contrasting’ lights like street lights, store fronts, fluorescents...need to have sense of urgency and plan ahead, so can get your shots finished during this window...make sure entire crew understands this...has same sense of urgency and understanding only have 15-20 mins

Ultimately you can spend years studying the technical aspects of lighting and color grading and color correction, without moving forward one step artistically. In the end it is more intuitive and emotional than technical. Color theory is just a useful tool to give you starting points, and thus get you started. Remembering that inertia is the artist’s biggest enemy. The ‘funk’ of ‘the blank sheet of paper’ and ‘blank music score’. So trust your own sense of aesthetics. Or that of someone whose taste you do trust. Be informed by the technical, but don't allow yourself to be limited by it. Take risks. Trust your eyes. The same as any recording engineer, mix engineer, producer, or mastering engineer, must ultimately trust their ears.

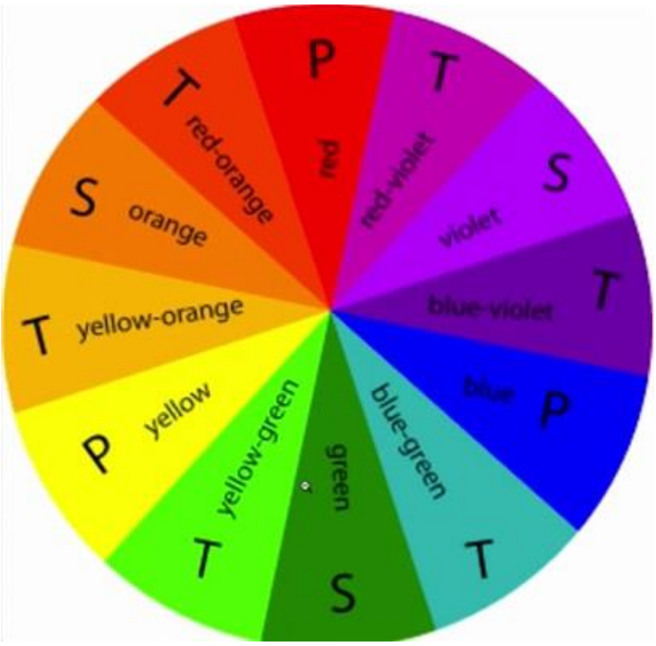


Color in film reduces to 3 main elements. The color itself is often referred to as '**Hue'**. Then there is how **intense** that color is, often referred to as **'saturation'**. And finally how **'bright'** that color is, often referred to as 'tone' or **'value'** or **'shade'**.

Saturation is the most subjective, as we all 'see' color slightly differently, just like different people will 'hear' the same sound differently, due to hearing damage, and other factors, such as 'association', which are often totally sub-conscious

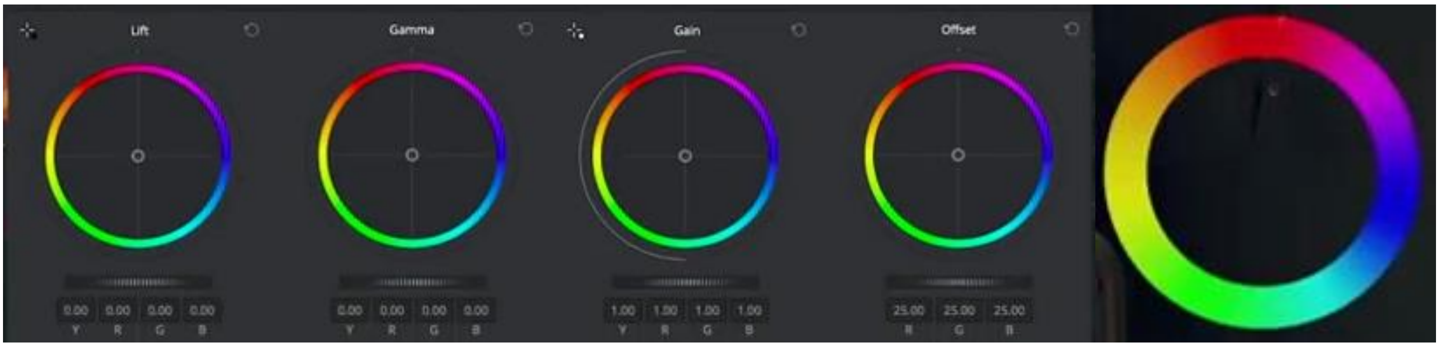


Below is a **color wheel** that can be used as a reference. **Complementary colors** are those opposite each other on the color wheel. These tend to 'compliment' each other. One way to create a sense of '**depth'** in an image is using such complementary colors. Such as Blue and orange. Red and green. Yellow and Purple. This way the foreground stands out clearly from the background. You can ‘mask’ and ‘layer’ copies of the same footage, to add different color tints to that part of the footage you want to appear as ‘foreground’, and that part you want to appear as ‘background’, even if the actual footage is quite ‘shallow’, even ‘flat’.

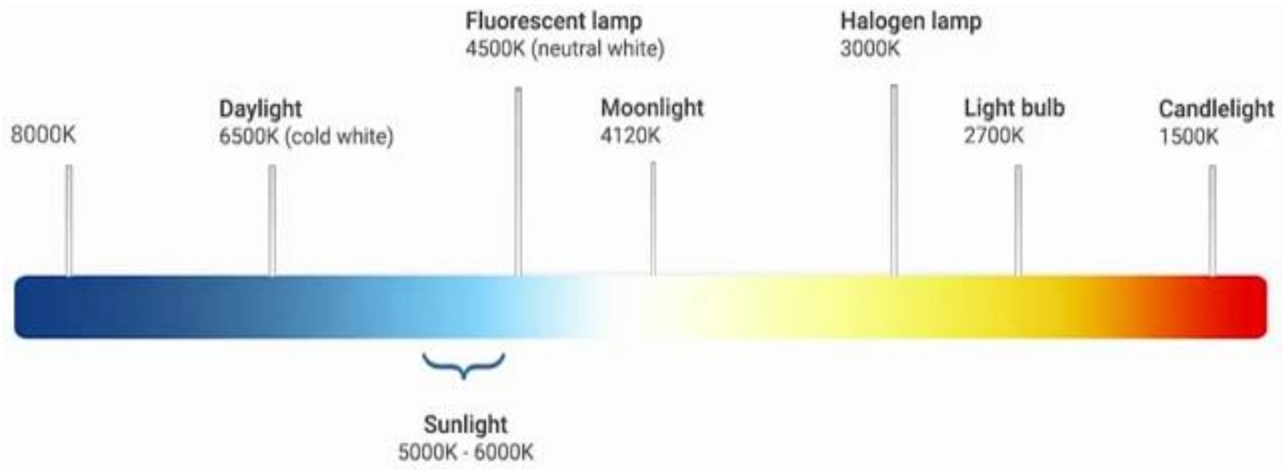


People often associate different colors with different emotions, moods, expectations, and thus these colors can evoke these associations, subliminally, and produce different emotions and feelings in the viewer. To help 'tell the story'. To evoke the desired expectations in viewer. Emotional responses. To 'enter into' the subjects feelings, by way of the colors, along with all the other elements, to manipulate the viewer.

Sometimes you might choose to light scene and film it with particular colors. In which case you'd want to be following a plan. Otherwise you can always add different colored lights in post. And color correct within the limits of the original data you recorded a.k.a 'filmed'. Remember that the less ‘RAW’ and ‘Log’ your initial shots are, the less information you will have to ‘play’ with in post-production. Remember that actually filming with ‘color’ is a form of ‘destructive editing’ that you might not be able to ‘undo’ in post-production, or even ‘correct’ for. It is a real commitment you are making. Which can save you time. Or cost you dearly. Like marriage. But as Nietzsche reminds us, ‘Leben ist Risiko’ (Living requires taking risks).

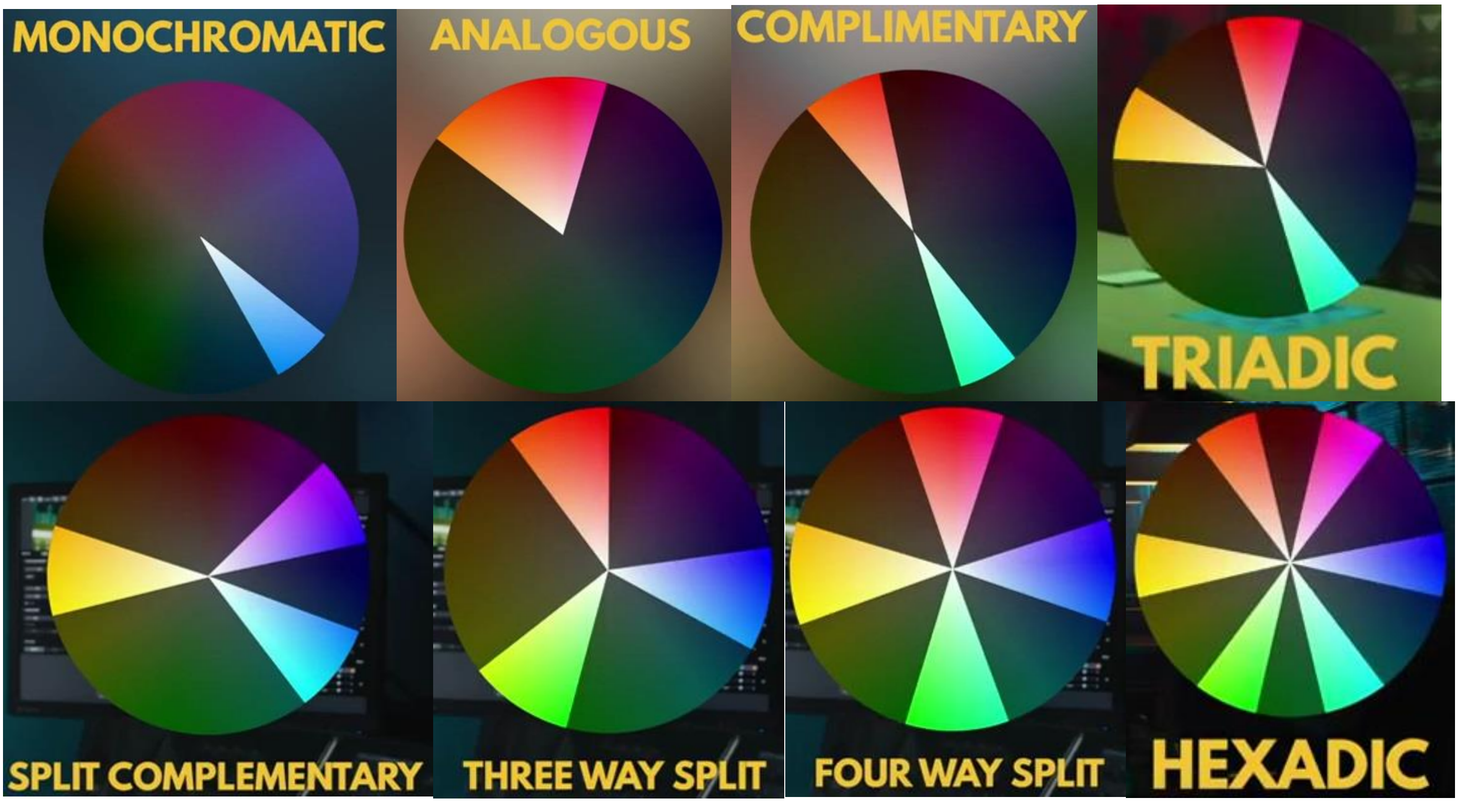


Color Temperatures also play a role. In the context we are using the term, ‘temperature’ refers to how the color white light looks on camera. People often speak of **'indoor'** temperatures, around 3200 **Kelvin**, Vis a Vis **'outdoor'** ‘sunlight’ temperatures around 5500 Kelvin. Lower temperatures are considered **'warmer'**, such as **orange**. Higher temps are considered **colder**, such as **blue**. These two colors are **'complementary'**, being on opposites sides of the **color wheel**. so you might color grade moonlight reflecting off water in the background as blue, and add more orange to the fire on the beach, to warm it up, to get your contrast and thus depth and complementary temperatures...



Fluorescent lights often have **'green' tinge / spike** Vis a Vis 3200 film stock, which shows up with a ‘**green** spike’. A ‘**coldness’**. If you add some **orange** in color correction, you can ‘**warm’** this up to produce a **cyan**.

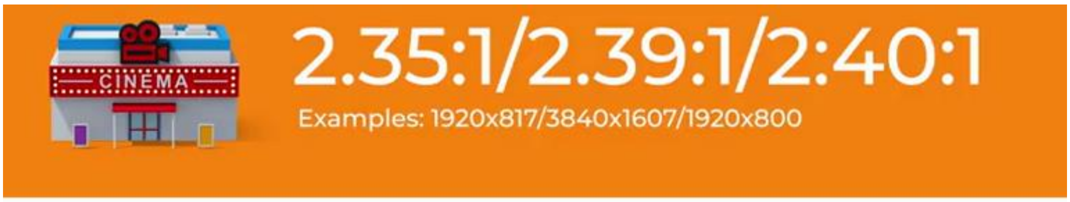
Common ‘color schemes’

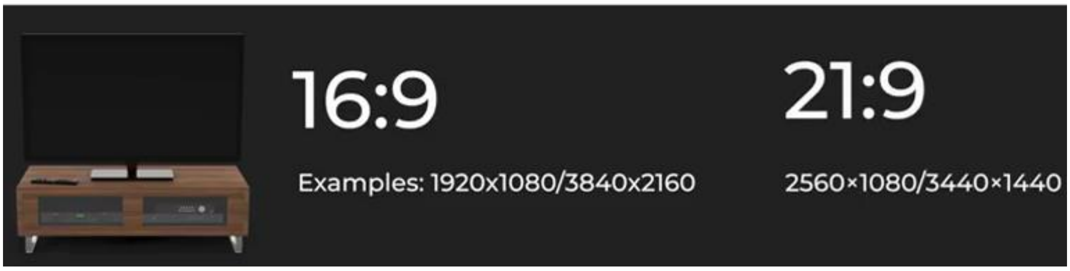


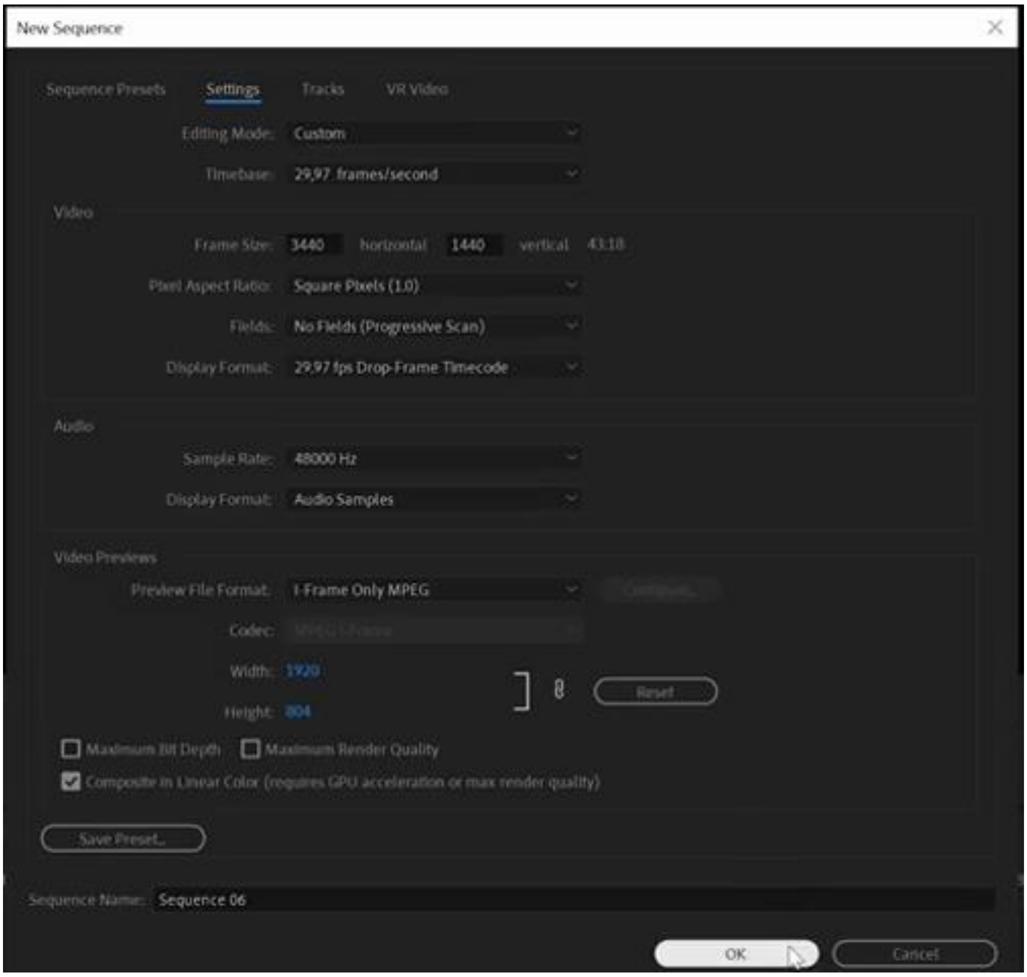
Aspect Ratios

A common ‘standard’ aspect ratio is the ‘widescreen’ 16:9 SLR. A newer ‘standard’ is the ‘ultra-wide-screen’ ratio of 2.35:1, in which the width is 2.35 times the height.

‘Letter boxing’ refers to the practise of adding black bars to the top and bottom of conventional aspect ratio video, to give the ‘wide-screen’ ‘look’ associated with big budget cinematography. If you plan to do this, remember you will be losing the top and bottom of all your shots, so frame all your shots with this in mind, so that after ‘letterboxing’, you don’t lose anything important.







Editing Mode: Custom

Timebase: 29,97 frames/second

Video

Frame Size: 3440 horizontal 1440 vertical 43:18

Pixel Aspect Ratio: Square Pixels (1.0)

Fields: No Fields (Progressive Scan)

Display Format: 29,97 fps Drop-Frame Timecode

Audio

Sample Rate: 48000 Hz

Display Format: Audio Samples

Video Previews

Preview File Format: I-Frame Only MPEG

Codec:

Width: 1920

Height: 804

☐ Maximum Bit Depth ☐ Maximum Render Quality

☑ Composite in Linear Color (requires GPU acceleration or max render quality)

Sequence Name: Sequence 06

Change aspect ratios before rendering and exporting

Tips on what to consider when buying a camera and camera accessories

Wi-Fi

Some video cameras operate like a webcam, allowing you to stream directly to your laptop, which you can then use as a real-time monitor, as well as data storage. You can then record hours of high resolution video directly to your laptop memory, or other 'smart' device memory, SSD or memory chip.

However the 'Wi-Fi' option most video cameras offer is merely the option of wireless downloading of your recordings from the cameras memory chip to a laptop, or other 'smart' device, via Wi-Fi.

Memory and battery

Pay attention to how and where the footage you shoot is stored. Some camera's use memory chips. Older ones may use bulkier medium with low storage capacity. My ideal is to record directly to a laptop SSD. At least having the option of transferring data to a smart device increases your effective memory, and thus allows you to shoot at higher resolution, and/or to shoot for longer. Whatever form your camera memory takes, be sure to have extra back-ups with you if are going outside for a shoot. You don't want to run out of memory before you run out of inspiration, or adequate light. The same goes for batteries. Keep some spare batteries with you. And compare the cost of such back-up batteries before buying, as just one more factor in your decision making about which camera to buy.

Please consider

Remember that my entire TROONATNOOR imprint is available for download from my TROONATNOOR Patreon page, my TROONATNOOR WordPress Page, and using links in my Bitchute (Saving Us and The Jews from The Cult of Judah) channel, and also links in my 'Marduk Tyr' Facebook page. I ask you to seed the entire folder, thus the entire TROONATNOOR library, in return for my life's work. That is the only reciprocation of ask of you, in return for my decades of my effort, sacrifice, and risk. If what I write resonates with you, and you wish to support my work, and make it possible for me to reach more people, and do more good, then contact me at markusrehbach@yahoo.com. Or make an anonymous donation to my markusrehbach@yahoo.com PayPal account. The more resources I have the harder I can struggle and the greater risks I expose myself to, from our mutual adversary, The Cult of Judah. So I am ambivalent about any 'success' which might raise my profile, and thus make me a 'target'. So please download the entire TROONATNOOR folder from WordPress, using the links, and seed it. So that maybe a few more people will get the benefit of what I have struggled to learn, and share.

MARKUS HEINRICH REHBACH
Sovereign Ecclessia of The Free Church (The Vegan Church)
TROONATNOOR
Patreon WordPress Bitchute

Markus Heinrich Rehbach
Sovereign Ecclesia of The Free Church (The Vegan Church)
Under the State of Emergency in Cult of Judah occupied Estonia
This day, May 13, in the year of our Cult of Judah occupation, 2020